Climate Change and GHG Emissions Reporting in Russia: practice and perceptions

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Abstract

Global climate change is one of the biggest environmental problems the planet is facing, which is thought be a result of greenhouse gas (GHG) emissions. This study investigates climate change and GHG emissions reporting in Russia, one of the biggest GHG emitters in the world. The study draws from neo-institutional theory. The empirical analysis was carried out in several stages: analysis of the Russian context; quantitative content analysis of GHG emissions; qualitative content analysis of climate change related disclosures; followed by in-depth analysis of managers' and accountants' perceptions of climate change issues.

Contradictory logics imposed by the institutional and market context lead organizations to seek the "win-win" approach to climate change issue, where the company can be profitable and environmentally friendly. The findings also show the difference in the approach to climate change problem across different sectors, suggesting that industries diffuse appropriate templates within a sector. At the same time, results demonstrate the variations within sectors. The results of also demonstrate that the change in practice takes place if a new practice is supported by a powerful group, for example by the board of directors. The findings show direct relationship between companies' size and GHG disclosures. The results also demonstrate that financial resources play important role in changing the practice. These findings support Greenwood and Hinings' (1996) suggestion that companies need a capacity for change to be able to manage the process of change to a new disclosure practice.

The originality of the study is in its focus on a developing/transitional economy, with the in-depth analysis of Russia's context. It is suggested that application of a neo-institutional perspective in the analysis of the accounting practice within a transitional/developing economy is particularly useful. Application of a mixed methods approach allows understanding climate change related disclosures among Russian companies and appreciating the reasons behind those (non-)disclosures.

Dedication

I dedicate my thesis to my family. A special feeling of gratitude to my dear husband, Ildar, who has been a constant source of encouragement and support during the challenges of study. This work is also dedicated to my wonderful son, Artur, my loving parents Miftakh and Venera Khazgalievi, my beloved brother, Ildar and my kind granny Minninur Fazrakhmanova. I am also thankful to my parents-in-law, Rafik and Saria Sagitovi, to my aunt, Iliza Ilyasova, and to my sister-in-law, Liana.

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Declaration

Table of contents

List of Tables

List of Figures

List of Abbreviations

APG	Associated petroleum gas
BAFA	British Accounting and Finance Association
BGMEA	Bangladesh Garments Manufacturer and Exports Association
CAQDAS	Computer assisted qualitative data analysis software
CDP	Carbon Disclosure Project
CDSB	Carbon Disclosure Standards Board
CPRS	Carbon Pollution Reduction Scheme
CSEAR	Centre for Social and Environmental Accounting Research
CSR	Corporate social responsibility
DEV	Disclosure expectancy variable
EmIInd	Emission Intensive Industries
EMS	Environmental management system
EU ETS	European Emissions Trading Scheme
FL	Federal Law
FSFM	Federal Service for Financial Markets of Russia
FSSNR	Federal Service for Supervision of Natural Resource Usage
FSSS	Federal State Statistics Services
GHG	Greenhouse gas
GRI	Global Reporting Initiative
IPCC	The Intergovernmental Panel on Climate Change
ISE	International Stock Exchange
JI	Joint Implementation
MICEX or MICEX-RTS	Moscow Stock Exchange
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
RF	Russian Federation
ROA	Return on assets
RRM	Reputational risk management
SEC	Securities and Exchange Commission
SEE	Social, ethical and environmental

SER	Social and environmental reporting
UK ETS	UK Emissions Trading Scheme
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
WBCSD	World Business Council for Sustainable Development’
WCIOM	Wide Centre for Research of Society's Perceptions
WRI	World Resources Institute

Chapter 1: Introduction

1.1 Preamble

One of the major environmental problems in the world is global warming. There is scientific evidence that human activity in the industrial era is the reason of global warming. Thus, according to the Intergovernmental Panel on Climate Change's (IPCC) fifth assessment report, it is more likely that influence of humans has been main reason of global warming (Stocker et al., 2013). To fully understand the importance of necessity of reduction of greenhouse gas (GHG) emissions, the scientific aspect of global climate change should be explained.

The life on the planet is maintained because of the greenhouse effect, which allows the average planet temperature be around 33 degrees Celsius higher, than it would be otherwise (see Bebbington and Larrinaga-González, 2008). Such gases as carbon dioxide, methane, nitrous oxide and hydrofluorocarbons play significant role in creating greenhouse effect. However, with the industrial revolution the amount of GHGs emitted into the atmosphere increased dramatically. If before industrial revolution the concentration of GHGs in the atmosphere was around 280 ppm then current levels are 430 ppm (Stern, 2008). Thus, according to Stern (2008), people emit GHGs through production and consumption, and then emitted GHGs accumulate into stocks of GHGs in the atmosphere. In the global warming process, the most important issue is the overall stock of GHGs, not where it was produced. The rate of accumulation of GHGs depends on 'carbon cycle', which includes the Earth capabilities for absorption (by forests). This stock of GHGs traps the heat in the atmosphere and results in global warming. Stern (2008) emphasizes that an increase in the world's temperature of 4-5°C on average would involve radical and dangerous changes for the whole planet and potential risks are overwhelming. According to Schellnhuber (2006), anticipated harm of climate change might include: extinction of species, loss of ecosystems, loss of human cultures, threat of water resources (see Bebbington and Larrinaga-González, 2008). According to some predictions, if the population of the planet will continue to do business as usual then it is likely that by 2050 the concentration of GHGs in the atmosphere will reach 600 ppm, which might trigger dangerous climate change (see Bebbington and Larrinaga-González, 2008). In order to achieve at least GHGs concentration of 500-550 ppm requires substantially change in human activities.

Thus, a key phenomenon is that industries are burning fossil fuels, which heats the atmosphere through emission of GHGs (Solomon et al., 2011). According to Luo et al. (2013), business organisations have come to be considered accountable for their environmental impact including through GHGs and carbon emissions disclosures. As per the authors, national governments and non-governmental organisations (NGOs) played a significant role in making companies aware of the need to reduce their GHG emissions. And indeed many companies ostensibly now disclose their climate change impacts (Solomon et al., 2011). Pellegrino and Lodhia (2012) also state that for companies themselves it is also important to control their carbon emissions in order to maintain sustainability. Luo et al. (2013) explains that companies gradually recognised that they suffer material risks associated with climate change. These risks include direct physical impacts, for example, damage of their facilities because of flooding or extreme weather, as well as changes in climate change policies and regulations. If such carbon accounting is potentially more significant vis-à-vis companies' accountability to stakeholders for their financial and non-financial performance (Bebbington and Larrinaga-González, 2008), it also, for Milne and Grubnic (2011), creates challenges. Accounting for GHG emissions is deemed extremely challenging, for instance given uncertainties in GHG emission estimation methods. Cooper and Pearce (2011) also demonstrate the difficulty of measuring and accounting for climate change.

One of the first attempts to regulate internationally the GHG emissions across all countries was undertaken by the United Nations (UN), through the Kyoto Protocol, which will be discussed later in Chapter 4. Although some measures have been taken on the international level, the response so far has been quite slow and largely ineffective (Boston and Lempp, 2011). In fact, not all countries ratified Kyoto. For example, Russia, along with others including the USA, Canada, Japan and New Zealand, is not participating in the Protocol's second phase: these countries have opted for their own measures (Lutova, 2012). This inconsistency in relation to the climate protection influences business organisation perceptions, as suggested by Secretary-general Angel Gurria at the Forum in Davos (Gurria, 2014). Secretary-general believes that business is reluctant to invest in greener technologies because business does not see that governments are consistent in relation to the climate protection.

According to Gurria (2014), there is a gap between what policy makers say and what they do. In fact, anthropogenic emissions levels differ between countries, as do

measures employed to counter these. Some countries reduced their carbon emissions, even some that did not ratify the Protocol, but others, especially developing economies, like China, increased their pollution compared to 1990s levels (Harvey, 2012). Per a key report by the Organisation for Economic Co-operation and Development (OECD, 2011), Russia accounts for a disproportionally large share of global carbon emissions. Russia is the world's sixth largest economy in Purchasing Power Parity (PPP) terms and the fourth largest GHG emitter. Yet, as noted, Russia still chose not to participate in the Kyoto Protocol's second phase (Lutova, 2012). There are some specific reasons for the levels of GHG emissions in Russia, considered in Chapter 4. In criticising Russia, a country with a transitional economy, it should be acknowledged also that most developed countries have struggled to implement effective measures to reduce their carbon emissions and the international response has been quite slow, as was mentioned earlier.

International regulations for controlling and reducing GHG emissions at the international level also include European Emissions Trading Scheme (EU ETS). ETS is used by governments as an incentive for business to reduce their emissions, through imposing financial costs and creating incentives for investing in low emitting technologies and reporting the impact of climate change (Luo et al., 2013). To help to report on the impact of climate change such organisations as Global Reporting Initiative (GRI) and Carbon Disclosure Project (CDP) developed guidelines, which companies can apply. GRI is an international organization that provides guidelines to businesses, governments and other organisations, which help to communicate the impact of their activities on such sustainability issues as climate change, human rights, corruption and other. On the other hand, CDP is related only to climate change issues. Thus, it was established to pursue two objectives: to make managers aware about investor's concerns about climate change and to inform investors about possible firm's risks related to climate change (Stanny and Ely, 2008). CDP argues that the process of disclosing information to CDP incentivizes companies to measure, manage and reduce their environmental impact.

Various studies have addressed the quantity and quality of social and environmental reporting generally, employing different perspectives, such as those characterised as legitimacy, stakeholder and political economy perspectives (Freedman and Jaggi, 2005; Hrasky, 2012; Prado-Lorenzo et al., 2009). However, a review of studies on carbon

disclosure practice reveals lack of focus on developing and transitional countries. For Gray et al. (1996) further research on the extent and nature of disclosure in this area across countries is needed. Other studies stress the paucity of studies addressing social and environmental reporting practice in developing countries (Islam and Deegan, 2008; Kolk et al., 2008). Furthermore, research exploring GHG emissions disclosure practice arguably underplays the importance of the context in which the (non-)reporting company operates. It is, however, suggested that the context of the country where the firm operates influences accounting and disclosure practice. Therefore, it is suggested that the analysis of the context furnishes insights into particular practices in place.

According to Owen (2004) it is also valuable to explore the motivations of social and environmental disclosures, as well as rationales for undertaking climate change activities (Bebbington *et al.*, 2008; Rankin *et al.*, 2011). Rankin *et al.* (2011) also suggests that motivations of proactive firms to adopt activities addressing the issues of climate change should be explored.

It can be argued that the motivations of managers towards climate change related (non-) activities and their (non-)disclosure would be affected by the context of where the companies operate. Thus, according to Campbell (2007) institutionalists have long recognized that normative institutions vary significantly in ways how they affect corporate behaviour across different countries and as per Kostova and Roth (2002) even across different organisational units (see Dacin et al., 2002). It is therefore important to investigate the normative or legislative context of the country where the companies operate.

Furthermore, it was also considered that perceptions of disclosure preparers, in particular views of managers and accountants, towards environmental and climate change issues are important. The analysis of their views allows an appreciation of the current accounting practice and informs suggesting ways forward. However, there is a limited number of studies which explore the attitudes and perceptions of social and environmental accounting beyond developed economies (Kamla et al., 2012).

Thus, there is a limited number of studies exploring disclosure practice and motivations for those disclosures within developing countries. It can also be noted that there is a lack of research on Russia, in particular. Puffer and McCarthy (2011) acknowledge that although Russia undergone a substantial change in the economy, there has not been

given much attention to the Russian context in the literature as to other BRICS countries such as India and China. This study is contributing to filling this gap. This thesis explores the impact of the internationally raised issue of climate change on the disclosure practice of Russian companies. Approach to the research questions is informed by Laughlin's (1995) middle range theory. This suggests 'balanced' approach in theoretical paradigm. This study is interpretive in nature and there was no attempt made for a high level of prior theorizing. It was important to understand the GHG emissions and climate change related practice as well as the motivations for those (non-)activities and ways to change the practice, rather than to test suggestions. Thus, the relatively open theoretical position is informed by a concern to analyse the contextual and institutional setting and a framing that adopts the tenets of neo-institutional theory is found to be useful in framing the analysis while being committed to openness and a concern to explore the issue through empirical engagement.

The rest of introduction chapter is structured as follows. The following section outlines the core questions. The chapter then concludes with brief guide to the structure of the thesis.

1.2 Scope of the Research

As mentioned above, Russia is one of the biggest GHG emitters in the world. From scientific perspective, it does not matter where GHGs are emitted, but the global stock is very important. If some countries take measures to reduce their climate change impact while other countries are concerned more with their economic development and ignore their influence upon the climate change, the global population will still have to face the consequences of the climate change. Therefore, it was considered important to understand the current practice in Russia and its future prospects.

This research study has three main objectives. First of all the study analyses the Russian context, it then explores and interprets GHG emissions and climate change related disclosures provided by Russian companies, then the study seeks the perspectives of managers and accountants towards GHG emissions and climate change related issues.

The literature review, which is discussed in chapter two, demonstrates that studies so far have underplayed the importance of the context (local, global and historical) when analysing climate change related disclosures. An in-depth contextual approach would

enhance theoretical appreciation of disclosures, which have largely viewed practices through a constrained lens of legitimacy. In fact, Kamla et al. (2012) and Puffer and McCarthy (2011) encourage context-specific research. Kamla et al. (2012) suggest strategies for change and intervention vis-à-vis social accounting should reflect contextual differences and specificities. Context-specific dimensions are here likely to influence understanding of environmental and carbon accounting developments or their lack, whilst also global insights can be gained through study of the local as well as global. Therefore, this study analyses global, social, historical and political context of Russia in relation to environmental and in particular climate change related issues.

The importance of the organizational context is also emphasised in institutional theory literature, for example (Dillard et al. 2004; Greenwood and Hinings, 1996; Meyer, 2008). This particular study demonstrates the influence of organizational context on GHG emission disclosure practice through the neo-institutional perspective. In fact, it is argued in this study that the neo-institutional perspective is very useful in exploring the change of an accounting practice in developing or transitional economies as it allows to appreciate not only impact of the organizational context but also of the intra-organizational dynamics. In order to explore the influence of those two dimensions this study analyses GHG emission and climate change related disclosures provided by Russian companies and seeks to understand the views of accountants and managers about the climate change issue.

Thus, one of the main objectives of this study is to explore current GHG emissions and climate change related disclosure practice in Russia. In seeking the level of GHG emissions and climate change related disclosures, this study attempts to add to carbon accounting literature. Belal and Owen (2007) note that regarding corporate social disclosures generally only a few studies look at developing country practice. However, understanding social or environmental disclosures in developing or transitional economies is important. Those practices could be different from practices in developed economies. As mentioned, in the case of carbon emission disclosures it is particularly important, as no matter where the company operates it contributes to the global stock of GHG in the atmosphere. Furthermore, Stanny and Ely (2008) call for further research that would explore which incentives work across different contexts to insure appropriate disclosures by companies globally, as it is a global problem.

Analysis of GHG emissions disclosure practice in Russia, a country with transitional economy, is very important because of the significance of the problem of climate change and Russia's contribution towards the global GHG stock. This study aims to address such sub-questions in relation to disclosure of GHG emissions particularly:

- What is the level of GHG emissions disclosures by Russian companies?
- What are the characteristics of those companies that disclose GHG emission information?
- What is preferred media used to disclose GHG emissions information?
- Companies from which sectors disclose GHG emissions information?
- Does the intensiveness of GHG emissions in different sectors affect companies' disclosure practice?
- Does the listing on any of the international stock markets affect the disclosure of GHG emissions?
- What kind of GHG emission information companies disclose?

The study employed quantitative content analysis in order to analyse disclosures related to GHG emissions. Here, the GRI guidelines were used as a benchmark. However, it was found that usage of only quantitative content analysis did not allow capturing disclosures related to climate change generally.

To overcome limitation of quantitative analysis, the study also employed qualitative content analysis. This approach allowed exploring the impact of organizational context, including when the cues and signals for conformance from different institutional contexts were contradictory. Thus, the aim of qualitative content analysis was to explore what issues related to climate change disclose Russian companies, whether the disclosures related to climate change differ between sectors and whether the organizational context influences the climate change disclosure practice of Russian firms. The qualitative context analysis also allowed to explore how the message related to climate change was constructed by Russian companies and to explore what approach companies employ to reduce their climate change impact.

Another main objective of this study is to seek perspectives of different constituencies, mainly of managers and accountants, on the issue of climate change. in particular, this study aimed to explore constituencies' views on:

- attitudes of the Russian business, the state and the society towards the issue of global climate change.
- companies' motivations for undertaking activities aimed to reduce GHG emissions.
- companies' reasons for not undertaking measures that would reduce climate change impact.
- companies' motivations for voluntary disclosures of information related to GHG emissions and climate change activities.
- companies' reasons for not disclosing information related to climate change and GHG emissions publicly.
- how the approach towards climate related issues and the disclosure practice among Russian firms can be changed?

In order to gain the in-depth understanding of accountants' and managers' views, this interpretive study employs interview method. The interview approach in this study allows not only exploring the influence of organizational context but also gaining insights of the role of intra-organizational dynamics in changing practice within the organization.

Thus, this interpretive study employs the neo-institutional perspective. In particular, the study utilizes the framework proposed by Greenwood and Hinings (1996) in order to explore the current GHG emission and climate change reporting practice among Russian companies. This framework allows to appreciate the influence of the organizational context as well as to understand role of the intra-organizational dynamics in adoption of a new.

It might be suggested that analysis of investigating companies' GHG emission reporting practice, managers and accountants views on measures taken, on what barrier they have, and how the practice can be changed through appreciating of global, social, political and historical context it would be possible to offer ways forward.

1.3 Structure of the Thesis

The research study is organised into eight chapters. Following current Introduction Chapter, Chapter two presents a review of the literature. The review of the literature was conducted on issues concerning the questions investigated in this research study. In

particular, it draws on literature investigating the extent and quality of carbon emissions disclosure practice. The literature review chapter also analyses studies, which explore the attitudes of accountants, managers and auditors towards environmental issues, as there are limited number of studies, which focus on attitudes of those constituencies towards climate change issues in particular. The chapter also analyses those scarce studies that investigate environmental disclosures in the Russian context. The chapter explores theoretical underpinnings of those studies, approaches applied in those studies and their findings. Chapter two discusses implications and gaps of those studies and suggests way forward.

Chapter three addresses issues of theory, methodology and methods. Here, Laughlin's (1995) analysis of research paradigms is utilised as it provides a useful framework to conduct empirical research in accounting. This study adopts the "balanced" approach in relation to three dimensions of the framework: "theory", "methodology" and "change". The chapter provides explanation of the choice of that positioning, briefly outlining its main characteristics. The chapter also briefly outlines institutional theoretical perspective. Here, methodological orientation of the research discussed, with outlining the value of qualitative research. The chapter ends with a brief overview of the methods employed as well as the value of using triangulation in the research.

Chapter four outlines the scientific concerns related to increased GHG emissions, which related to global climate change. The chapter argues that it is important to analyse the change in practice being informed by the context. Therefore, the chapter provides insights into development of international response to that issue. The chapter also outlines the environmental situation in Russia, explores society' attitudes towards the environmental issues in general and analyses the approach of authorities to environmental issues historically. The analysis suggests that environmental issues were not a priority during the Soviet period and they were not a priority during more recent times. The chapter analyses climate change mitigation on the State level too.

Chapter five examines the current GHG emissions disclosure practice and reporting of climate change related activities. The chapter outlined the research design, differentiating between quantitative and qualitative content analyses. Both of these methods are employed in the current study in order to answer both of those broad questions. For the quantitative version of content analysis GRI guidelines were used as a benchmark in order to assess questions mentioned in previous section of the Chapter

1. For qualitative analysis themes emerged during literature review and context analysis were used to form the framework.

Chapter six explores the perspectives of different constituencies, in particular, companies' representatives, on measures taken by companies to reduce their environmental impact, what are the barriers for undertaking those measures, the reasons for (non-)disclosure of GHG emissions and climate change related information publicly, and their views on how the practice can be changed. Semi-structured interviews were used to pursue that objective. Semi-structured approach suggests that themes for discussion are prepared in advance, although those themes are quite flexible. In order to explore differences in practice across firms, which was found through content analysis, this study conducted interviews with companies' representatives from different sectors. In this study, interviews were informed by the specificities of the Russian context and by the results of qualitative and quantitative versions of content analyses.

Chapter seven presents a discussion of empirical results through the lens of institutional theory. The approach utilized in this study was informed by Laughlin's (1995) middle range positioning. Here, as was explained, the theory was not used to test hypothesis, it was rather quite iterative process. When analysing results it seemed that in particular neo-institutional theory was best applicable in explaining the change in practice among some of the Russian companies. Here, it was considered that the framework proposed by Greenwood and Hinings (1996) would be very useful, as it provides a model of change that links organisational context and intra-organisational dynamics. The range of different methods applied to investigate complementary questions gave opportunity to highlight different aspects of the framework, providing opportunity for recommendations.

Chapter eight is a concluding chapter. It provides a summary of the main findings from three empirical chapters. It highlights limitations of the current study. It also suggests areas for further research and policy recommendations.

Chapter 2: Literature on GHG emissions disclosure practice, motivations for those disclosures and attitudes of accounting profession and business management to environmental issues

2.1 Introduction

The objective of this chapter is to review critically the existing literature on attitudes to the interface between business cooperation and environmental issues of accounting profession and business management. A concern is to elaborate strengths and weaknesses of this literature including identifying gaps in previous research.

Environmental issues became increasingly important in recent years in society. Accounting research took active role in drawing attention and offering solutions to environmental problems through engagement with practice and policy (Gray et al., 2009). According to Mathews (1997), first signs of new development in accounting, in particular accounting for social and environmental matters, appeared in early 1970s with mainly social issues being discussed at that time, while environmental issues became more emphasised only from the early 1990s.

One of the significant environmental problems arising from industrialisation of the world is emission of GHGs, however, this problem drew attention of accounting researchers just recently, as Gray et al. (2009, p. 566) pointed that there was 'almost complete absence' of studies related to carbon emissions in accounting literature. One of the first studies on corporate responses to climate change was the study by Kolk et al. (2008), which stressed that carbon dioxide is the most important GHG that arises from human activities. Intergovernmental Panel on Climate Change also emphasised that "[h]uman activities are continuing to affect the Earth's energy budget by changing the emissions and resulting atmospheric concentrations of radiatively important gases and aerosols and by changing land surfaces properties" (Stocker et al., 2013, p. 121). One of the ways to affect business practice and to raise awareness among companies is to require disclosure of the information related to GHG emissions and climate change. According to Ascui and Lovell (2012), disclosure of information related to carbon emissions is very important as it gives society opportunities to avoid or reduce the damage caused by climate change, however the society loses its opportunities because organisations fail to provide with adequate and comparable information. Bebbington

and Larrinaga-González (2008) claim that because of climate change carbon accounting became more significant. Sullivan and Gouldson (2012) list different reasons of why companies could be concerned about climate change, such as "government policies to internalise the cost of carbon (e.g. through taxes or trading schemes), the potential for cost-saving through reduction in energy consumption, the opportunities in areas such as renewable energy and energy efficiency-related products and services, and the wider reputational benefits of taking a proactive approach to climate change" (Sullivan and Gouldson, 2012, p. 60). Here, carbon accounting, or environmental accounting in general, play an important role as it helps to recognise GHG emissions as well as effect of those emissions.

Indeed, many studies focused on climate change issues over last few years (Andrew and Cortese, 2011), including social environmental accounting literature (Ascui, 2014). In fact, there is recognition in accounting profession that accounting is playing a major role in development of disclosure practices that would assist public decision making (see Andrew and Cortese, 2011). Bebbington and Larrinaga-González (2008) explain where accounting and reporting is involved in global climate change, which are the financial accounting of carbon emissions allowances, accounting and reporting for the risks associated with climate change and reporting for the uncertainty associated with climate change. This suggests that accounting can play a very important role for companies taking into account climate change related issues and it has to move beyond its conventional role. There are some studies that analyse what companies reported in relation to climate change, in particular, the extent of GHG emission information disclosed, its quality, characteristics of companies disclosing this information, or usefulness of disclosed information. The primary concern of this chapter is to fully explore and critically assess the literature on carbon emissions disclosure and to identify gaps in those studies.

Significant role in tackling environmental problems within organizations play attitudes of different constituencies of those organizations towards those issues. There is limited number of studies that explore attitudes of companies' constituencies towards such specific issue as GHG emissions and climate change. However, there are some studies that focus on attitudes of various constituencies towards environmental issues in general. Here, also important to explore motivations behind social and environmental disclosures, as they might be similar to motivations for climate change reporting which

is a concern of this research study. Therefore, this chapter is paying particular attention to studies that explore perceptions of environmental and climate change related issues by various constituencies, in particular attitudes of accounting profession and business management. This chapter also analyses the studies focusing on motivations for social and environmental disclosures.

The chapter is organized as follows. Following introduction, the next section reviews studies concerned with climate change disclosure practices. Section 2.3 explores literature on attitudes of accounting profession and business management to environmental accounting and regulations. Section 2.4 explores motivations for GHG emission disclosures. Section 2.5 investigates studies on environmental accounting in the Russian context. Section 2.6 presents implications of those studies, identifies gaps in the literature and provides suggestions for further research. The final section 2.7 presents summary comments.

2.2 Carbon Disclosures

This section is focusing on review of the literature that is assessing the accounting disclosure practice, per se on extend and quality of carbon emission disclosures. As was mentioned, practice of carbon emissions disclosures attracted some researchers, whose studies stressed the importance of those disclosures to society. Andrew and Cortese (2011) elaborate on importance of carbon emissions disclosure and suggest that disclosure practices that would reflect the "carbon truth" of the business can be developed and would lead to "win-win" solutions. According to the authors, companies can win because they will have chance to identify "risks and opportunities", investors will be able to allocate the resources taking into account carbon related impacts while the planet would win through energy-efficient, carbon-responsible business practices. Consequently, it can be suggested that disclosure of carbon related information is important to firms, investors and the planet as a whole.

2.2.1 What is carbon accounting?

According to Ascui and Lovell (2012) various groups have different understanding of 'carbon accounting' because of different origins and objectives. The authors distinguish multiple frames of carbon accounting: physical carbon accounting, political carbon accounting, market-enabling carbon accounting, financial carbon accounting and

social/environmental carbon accounting. They suggest that for constructive learning and policy change there is a need to bring knowledge and experience of these different groups. Ascui and Lovell (2012) critique accountants' approach to understand carbon through comparison it with existing accounting terms, as taxes, leases, subsidies and commodities, the authors rather call for appreciation of the complexities caused by changes in climate policy or regulation. For example, Kolk et al. (2008) study is focused on measurement and trading of carbon allowances. The study suggests that carbon accounting is an "activity concerned with quantifying emissions that can be bought and sold in accordance with a particular set of legal standards and limits", and according to the authors carbon reports should "contain information on a wide range of climate related activities, including measurement of emissions, organisational preparations, technological investments, and trading and offsets" (Kolk et al., 2008, p. 725). Furthermore, Bebbington and Larrinaga-González (2008) emphasise that carbon accounting should not be only about financial accounting of carbon emissions but it should also include accounting and reporting for risks and uncertainties related to climate change. Stechemesser and Guenther (2012) offer definition of carbon accounting based on semantic analysis of the literature: "carbon accounting comprises the recognition, the non-monetary and monetary evaluation and the monitoring of greenhouse gas emissions on all levels of the value chain and the recognition, evaluation and monitoring of the effects of these emissions on the carbon cycle of ecosystems" (Stechemesser and Guenther, 2012, p. 36). Thus, according to the authors, carbon accounting should be concerned not only with monetary consequences but also with non-monetary effects.

The following sub-sections review carbon of GHG emissions studies. These studies have slightly different questions analysed but they all explored the carbon related disclosure. These studies are presented below under common themes: studies on carbon disclosure performance, studies on carbon disclosure strategies and studies on managerial incentives for carbon disclosures.

2.2.2 Studies exploring carbon disclosure in practice

This sub-section analyses the studies, which explored companies' GHG emission disclosure performance.

One of the first studies that explored disclosures of pollution performance was the study by Freedman and Jaggi (2004). That study investigates how effectively the electric utilities companies are moving towards reduction of carbon emissions. The study is focused on 66 US electric utilities with disclosures being made in 1998, which were compared to the 1990 base line, the year, which was set as the benchmark in the Kyoto Protocol. The authors investigated whether US companies took the signal for the reduction of carbon emissions seriously, even though the state did not ratify the Kyoto Protocol. Although there are no requirements to the USA under the Kyoto Protocol, the state issued 1990 Clean Air Act, which was focused on electric utility plants for reduction in pollution emissions. For obtaining information, related to actual emissions the authors used plants that were keeping track of their emissions through a continuous monitoring system and reported their emissions to the Environmental Protection Agency. For pollution disclosure data the authors, used reports submitted to the Securities and Exchange Commission (SEC), which the authors analysed using content analysis. The authors found that carbon emissions increased from 1990 by 35%, although the relative bases decreased. Freedman and Jaggi (2004) found a significant positive relationship between carbon emissions disclosures and actual carbon dioxide emissions although these disclosures were limited. The results of the study demonstrated that there was no change of the highest emitters in 1998 compared with 1990, so the authors suggest that worst emitters ignored the Kyoto Protocol. The authors suggest that to meet Kyoto Protocol's goals electric utilities would have to be more active. Freedman and Jaggi (2004) stress that there is a need to switch from coal to more efficient plants and technologies. The authors call for further research, which would suggest what measures individual companies should take to reduce carbon emissions.

Later Freedman and Jaggi (2005) explored and compared the disclosure of information related to pollution and GHG emissions by companies from Kyoto Protocol ratified countries with companies that were from countries that did not ratified the Protocol but operated in ratifying countries. The authors analysed annual reports, environmental reports and websites of 120 largest public companies in the world from chemical, oil and gas, energy, motor vehicle and casualty insurance industries, covering 2000-2002 period. These industries, as per the authors, are severely impacted by the Protocol, which is the reason of their focus. The authors conduct content analysis, which enables to build disclosure index and conduct regression analysis to identify the relationship between company's characteristics and their disclosures. The study also finds that larger

companies provide more detailed disclosures on pollution issues. The study did not find any correlation between return on assets (ROA), company's industry and the extent of disclosures. The authors found that companies from Protocol ratifying countries provide more detailed pollution disclosures, about their pollution performance and plans to deal with global warming compared to companies from countries that did not ratify the Kyoto Protocol. The authors employ legitimacy theory and suggest that business managers of those companies that operate in the Protocol ratifying countries seem to think that detailed disclosures would be important to company's public image, therefore disclose more.

Kolk et al. (2008) examines the development of GHG disclosure mechanisms using qualitative content analysis. The authors utilized theories of global governance, institutional theory and commensuration to understand the role of carbon disclosures. The authors analysed the process of carbon disclosure, which occurs through the CDP in order to understand carbon disclosure and reporting mechanisms. CDP requests annual information from companies around the world on their GHG emissions. The authors analysed CDP reports of 380 responding firms, which were published in 2007. These were companies from FT500, which authors expected to have established responses. Kolk et al. (2008) found that in 2007 more companies started to address climate change, thus, 90% of European and 74% of North American firms from the sample submitted to the CDP, and even emerging economies started to address the issue, including Brazil, China, Russia and India. Based on the increase of the number of companies submitting their CDP questionnaires, the authors suggest that CDP has become a very successful mechanism for institutionalisation of carbon reporting. The authors analysed the origins of investors involved in the CDP in order to understand whether companies felt pressure from them. They found that the number of investors involved in the CDP reports increased significantly over the years from 35 in 2003 to 310 in 2007. They note that in 2003 investors were mainly from the UK, while by 2007 the range of origins increased, and included much more investors from US, Japan, Germany and other. Here, it can be noted that even though Russian firms submitted their reports, as per the authors' findings, there were no Russian investors interested in CDP reports. The authors demonstrated that shareholder pressure can have an impact on GHG emission disclosures. However, the authors believe that CDP was not successful as it seems. The attempts to improve the questionnaire meant that it was difficult to compare company's results over time, suggesting that the quality of these disclosures

was not as successful. Kolk et al. (2008) found that commensuration is not sufficient both on the level of carbon disclosure reporting and detailed process of carbon accounting. The study found the lack of disclosure about types and meaning of emission data, reliability checks, so according to the authors it is difficult to understand reported achievements of a company. The authors question the usefulness of CDP reports to investors in their decision-making process. The authors suggest that there is a need for stricter carbon disclosure, which would follow clear, non-changing over-time guidance, allowing comparability and the provision of all relevant data. The authors suggest that the pressure might come from investment communities or policy makers.

Andrew and Cortese (2011) employ "critical dialogic engagement" to investigate how companies in energy sector represent the information on GHG impacts and how this may influence, support or distract climate change abatement policy development. The study explores the regulation of carbon reporting and the impact of "self-regulation" on carbon disclosure (Andrew and Cortese, 2011, p. 131). Among companies from different countries, the authors found a vast number of diverse carbon reporting methodologies used for the CDP questionnaires. Even though CDP suggests that GHG Protocol should be used as the methodology for GHG emissions disclosures, it is not a requirement. The results of the analysis of methodologies used demonstrated that companies used a variety of methods, industry schemes, and/or national legislation to guide their reporting (Andrew and Cortese, 2011). The authors emphasise that for the information to be useful for carbon responsible investment, the information need to be compatible and verified. The voluntary approach to GHG reporting allows to use prescribed guidelines or (how many firms do) to select other methodology that suits the reporting company (Andrew and Cortese, 2011). Regards, verification of the CDP reports, the authors found that it was absent. These issues, the authors explain, do not allow evaluating firms' performance. The authors suggest that the CDP should address those issues to become a guide for good carbon responsible investment. The authors also elaborate that as it is likely that voluntary climate change disclosure practice is likely to influence mandatory requirements in the future, the researchers should go beyond the discussion describing technical carbon disclosures.

Dragomir (2012) investigates relevant and reliable corporate environmental performance indicators employing qualitative reading of sustainability reports and focusing on disclosures of GHG emissions. The author suggests that sustainability

reports can be viewed as a valuable data source for researchers. The study analyses annual sustainability reports of top five European companies from gas and oil industries from 1997 to 2011 depending on when first GHG emissions data was mentioned in their annual reports. For qualitative assessment of GHG emissions, the author benchmarked disclosures against GHG Protocol, an international standard for corporate GHG accounting and reporting. The author analyses the quality of GHG reporting based on data credibility and relevance. In relation to credibility of reports, the author found that there is insufficient comparability between the data on the yearly bases, while estimation methodologies are often missing. In relation to relevance of the data, the author found that some of the elements considered compulsory by the Protocol were omitted. Dragomir (2012) suggests that those shortcomings in the collection and aggregation of GHG information influence the degree of credibility and relevance of sustainability reports. As Kolk et al. (2008), the study finds that there is growing standardization and professionalization of GHG reporting. Dragomir (2012) suggests that to promote transparency of corporate environmental performance it is essential to implement appropriate measurement and collection systems, the introduction of new estimation methodologies for existing databases and the adoption of international standards.

Another study that particularly focuses on voluntary carbon reporting is the study by Sullivan and Gouldson (2012). The authors investigate whether and how carbon reporting meets investors' needs. As per the authors, investors pay attention to climate change issues, although there is no standard of how to integrate climate change into investment processes. Investors, according to the authors, ask variety of questions about companies' climate change performance, which then inform their decision whether to invest in a particular company or not. Authors note that investors are more interested in quantitative data. However, this contradicts with Solomon and Solomon (2006) study, which found that investors displayed a significant interest in qualitative data of SEE-related information and Deegan and Rankin (1999), who found that users of annual reports preferred qualitative information related to environmental issues. Furthermore, as per Sullivan and Gouldson (2012), Carbon Disclosure Standards Board (CDSB) also stresses that for climate change disclosures to be useful for investors these disclosures have to be relevant and faithfully presented and enhancing characteristics should be comparability, timelines, understand-ability and verifiability. In order to examine usefulness of GHG disclosures the authors employed case study approach focusing on

the UK supermarkets sector. The authors analysed published reports of the nine major supermarket groups. Sullivan and Gouldson (2012) found that voluntary reporting of GHG emissions does not satisfy the needs of investors. Although investors can identify reporting companies and evaluate whether GHG emissions is a significant cost for the company, it is, however, difficult to compare companies and to assess the risks associated with companies' supply chains. The authors suggest that inadequate information is provided to investors and that reported information is a result of a lack of investors' knowledge of carbon emission issues, as they only demand that the information should be reported instead of demanding the quality of these disclosures. The authors also suggest that for carbon reporting to be improved demands of investors are not sufficient as these demands are not applicable to non-listed companies and other stakeholders should play a more active role, in particular, the authors point for the role of governments. They suggests that mandatory requirements are needed to deliver higher level of consistency of reporting, which is unlikely to be achieved through voluntary approach.

Stanny (2013) investigates GHG emissions disclosures made by US S&P 500 firms. The author analyses the trends in disclosure from 2006 to 2008. The authors was interested in specific disclosures in CDP reports, which are answering the questionnaire, disclosure of company's emissions and disclosure of accounting methodology applied in calculating those emissions. Stanny (2013) finds that companies disclosing information previously tend to continue to do so into the future. The study finds that although the majority of companies answer to the questionnaire, they fail to provide information on their emissions and methodologies applied. The author suggests that this supports the legitimacy theory, as the answering to the questionnaire allows companies avoiding scrutiny. Stanny (2013) suggests that US needs to adopt mandatory GHG reporting, as voluntary reporting is not sufficient.

Studies explored in this sub-section analysed companies' GHG disclosure practice across different industries and countries. Thus, Freedman and Jaggi (2004) and Sullivan and Gouldson (2012) analysed disclosures in particular industry – electric utility and supermarkets sectors respectively; and focused on a specific country – the US and the UK respectively. Stanny (2013) explored the reporting practice in a particular country, the US, but across different sectors. The other three studies (Andrew and Cortese, 2011; Dragomir, 2012; Freedman and Jaggi, 2005; Kolk et al., 2008) explored the reporting

performance across different countries and except the study by Dragomir (2012) on different industries. These studies utilized a variety of media to analyse companies' disclosures but consistently found that the disclosures on carbon related emissions are not credible and relevant and therefore are not useful to investors. The studies found that although compared to early years companies started to disclose more information, the quality of disclosures is still questionable. The studies argue that there is a need for stricter guidance, which would not change over time, allowing comparability and the provision of all relevant data.

Studies, which explored the carbon disclosure practice, however, did not take into account the context were the companies operate. Only study by Freedman and Jaggi (2005) considered one variable that could influence the disclosures – operation of the company in the country, which ratified the Protocol. However, it can be argued that it is not only ratification of the Protocol that can influence the carbon related disclosures, but the impact of the context, as well as internal dynamics. In fact, study by Luo et al. (2012), which is considered in section 2.2.4, did not find correlation between ratification of the Protocol and climate change related disclosures. It could be explained by the timing of those studies. Study by Luo et al. (2012) was conducted during the first phase of the Protocol, when the issues of climate change was more of an international agenda.

Thus, Studies analysed in this sub-section focused on the carbon related disclosure practice, the following sub-section reviews the studies, which explore further the issue and analyse the managerial incentives for those disclosures.

2.2.3 Studies exploring managerial incentives for carbon disclosures

Studies explored in this sub-section investigate different characteristics attributable to firms, which are more likely to report climate change related information, suggesting the incentives for managements' decision to disclose that information.

One of the studies that explores incentives for management's decision to disclose climate change related disclosures is the study by Okereke (2007). The study explores motivations, drivers and barriers to carbon management among UK companies listed on FTSE 100. The analysis was based on the number of desk sources, such as CDP reports, websites, Tyndall Centre database, or press releases. Although this approach to the

research question might be criticised, as it is quite subjective to decide based only on secondary data. Nevertheless, the author suggests that five factors motivate companies to take carbon management activities. These are: profit, competition for credibility and for leverage, fiduciary obligations of chief executives, desire to guide against possible risk or business loss, and ethical considerations. As for drivers, the author suggests energy prices, market shift, government regulation, investor awareness and pressure, and technological change. As barriers, Okereke (2007) points to the lack of strong policy framework, the uncertainty about government actions, and the uncertainty about the marketplace.

Stanny and Ely (2008) investigates whether variables related to environmental disclosure choices can explain disclosures related to climate change requested by investors through the CDP. Based on the assumption that more closely scrutinized firms are more likely to disclose information because it is more costly not to do so, the authors predict that factors associated with increased scrutiny will lead to increased probability of disclosures. For the analysis, the authors used answers from the fifth CDP questionnaire that included firms from US S&P 500. The results of the analysis reveal that companies are more closely scrutinised because of their size, previous disclosure and foreign sales and as a result, it is more likely that these firm will voluntarily disclose information to investors. The study does not find any association between disclosures and investment in new assets, so the authors suggest that although companies invest in new assets, these might not be the assets that would minimise carbon emissions. The authors also do not find any support to the argument that carbon intensive companies would be more likely to disclose. The worrying result is that even though many companies submit their voluntary disclosures to the CDP there are still 42% of companies that do not answer the questionnaire distributed by the CDP. Thus, according to the authors, the voluntary approach does not provide investors with important information on business risks, so the authors call for a regulation. Based on the argument that climate change is a global problem, the authors call for further research to explore which incentives work across different contexts to ensure appropriate disclosures by companies globally.

Prado-Lorenzo et al. (2009) investigates factors affecting disclosures of carbon emissions in annual reports. The study explores whether companies from different countries and sectors are undertaking environmental activities. To explore these

questions, the authors analysed information disclosed by 101 companies from such countries as the USA, Australia, Canada and the European Union countries. Companies from aerospace and defence; airlines; chemicals; energy; forest and paper products; industrial and farm equipment; metals; mining, crude-oil production; motor vehicles and parts; petroleum refining and utilities sectors were included in the analyses. The study also explores the factors affecting the disclosure practice. Prado-Lorenzo et al. (2009) used content analysis and employed legitimacy theory to analyse the results. The authors created a disclosure index based on the GRI guidelines on GHG emissions. Prado-Lorenzo et al. (2009) found positive association of the volume of information related to GHG emissions with the industry in which the company operates. However, the authors do not find difference between companies included in DJSI and those that are not, suggesting that this could be explained by the type of companies analysed, which are strongly scrutinized in their activities by other organisations. The results also reveal that the size of the company and commitment to environmental protection of the country where the firm operates influences the disclosures. The effect of the size on the volume is explained further and the authors suggest that as larger firms are more scrutinised they tend to reveal higher volumes of information, which is consistent with findings by Stanny and Ely (2008). The results of the study also support findings of Freedman and Jaggi (2005) on that companies operating in Kyoto Protocol ratifying countries have better reporting practices. Prado-Lorenzo et al. (2009) also found that companies with poor environmental performance disclose more information to make their companies more attractive to different stakeholders.

Gallego-Álvarez et al. (2011) investigate whether companies undertake environmental activities related to climate change and GHG emissions through legitimacy lens. The authors investigate opportunities arising from climate change, type of information related to those opportunities companies disclose on their websites and what are the factors influencing these disclosures. The authors conducted content analysis of disclosures made on the websites by 162 companies from different countries (developed and developing). The study explored companies from different industries, focusing on similar sectors as were analysed by Prado-Lorenzo et al. (2009). The authors found that 26% of companies in the sample do not disclose information related to opportunities from climate change. In relation to the factors that affect disclosures, the authors did not find any correlation between the size of the companies and the volume of the information on opportunities being disclosed. As well as Freedman and Jaggi (2005) the

authors found that companies with headquarters in countries that ratified the Kyoto Protocol are more likely to disclose information on climate change and the authors suggest that this is consistent with legitimacy theory, as managers presumably perceive that detailed disclosures are important for their public image. Both of these studies also do not find difference in reporting practices between companies belonging to DJSI and those that do not. The study also reveals that companies with higher environmental performance disclose more information on climate change. The authors stress that it is environmental performance rather than economic performance that affects the volume of disclosure. They also suggest that disclosure of information is not determined by the pressure exerted by public entities or customers and suggest that these constituencies should exert more pressure so the companies would have greater concern on environmental issues.

Luo et al. (2013) based on the Luo et al. (2012) investigates the difference in carbon reporting between developed and developing countries, across 15 countries and 10 industries. The study uses internal resource-constraint perspective to analyse the decision to report the information. The authors argue that managers face not only external pressures but also internal restrictions when deciding on reduction of climate change impact and disclosure of that information. The authors found that 41.12% of companies disclose carbon related data in the CDP, with lowest percentages in China (8.97%) and Russia (12.20%). In general, the authors found that companies in developing countries, companies with poor financial conditions, firms with more growth opportunities are less likely to disclose carbon related data. They also found that larger firms and heavy emitters are more likely to disclose. The decision to disclose is also affected by the country's legal system and participation in the ETS. The study found that financial resources are more likely to be a constraining rather than driving factor in developing countries specifically. The authors explain that reporting is only a part of climate change mitigating activities. In fact, those activities involve a substantial investment and a long-term commitment. The authors suggest that in disclosure decisions financial resources play a more important role for companies in developing countries. Luo et al. (2013) found that even though restricted resources negatively affect the decision for disclosures, strategic stakeholders (CDP signatories - investors) are influencing the disclosure propensity.

Wegener et al. (2013) investigate the effectiveness of CDP as a mechanism to influence firms' carbon disclosures and explores factors that influence the decision for climate change related disclosures in CDP reports. The study is focused on 319 Canadian companies and covers period from 2006 to 2009. Based on the previous study by Stanny and Ely (2008) that used institutional investors as a proxy for increased scrutiny, the authors argue that not all investors will attempt to influence management decisions to disclose. To explore investors' role in corporate environmental governance the authors use signatory ownership as a proxy. The authors found that institutional investors can affect the decision of managers to disclose information to the CDP, however it is rather domestic investors than foreign institutional investors. Wegener et al. (2013) also found that firms that exposed to lower levels of environmental litigation risk and low polluting companies are more likely to disclose environmental information to the CDP. The authors suggest that the CDP as an international governance mechanism is not sufficient on its own and there is a need for the participation of local institutional investors to make the CDP successful.

Ieng Chu et al. (2013) explores the factors influencing GHG emissions reporting among Chinese companies. The study employed content analysis of annual and CSR reports of companies listed on Shanghai Stock Exchange, which were published in 2010. The authors employed legitimacy theory to explain the disclosure practice. The authors acknowledge the importance of GHG emission reduction for Chinese government and outline regulations on GHG emissions in China. Although, those regulations are concerned with reduction of energy consumption, increase of energy efficiency, increase of utilization rate, improve sustainable development, reduction of pollutants. None of the laws on environmental issues requires GHG emissions disclosure in China. For measurement of GHG disclosures, the authors used 'number of sentences'. The study finds very high rate of GHG related disclosures – 92%. These findings of voluntary disclosure, as per the authors, support legitimacy theory. The authors suggest that there is an expectancy of those types of disclosures because of policies and regulations in place. The study finds positive relationship between industry sector and reporting on GHG emission related information. Ieng Chu et al. (2013) found that the size of the company is also related to GHG reporting. The authors suggest that companies provide those disclosures to mitigate the risks and pressures the industries are facing. However, the authors do not find relationship between profitability (measured as Log ROA) and GHG reporting, but find negative relationship between

state ownership and disclosures. The study also did not find relationship between international listing and disclosure of GHG emission information. The authors suggest that the reason might be related to Chinese early stages of balancing economic and sustainability interests. Although, the authors found that most of the companies disclosed GHG emission information the quality of those disclosures was poor, as information disclosed was mainly about good news or neutral. Therefore, the authors call for GHG reporting standard, which would encourage reporting of factual data.

de Aguiar and Bebbington (2014) explore the characteristics of climate change related disclosures in annual and standalone reports (environmental reports, sustainability reports and corporate social reports) using content analysis. The authors focused on organisations that took part in the UK ETS. The study employs New Institutional Sociology theory to explain possible influences on organisations' disclosure practice. The authors analysed disclosure across different dimensions. They investigated the volume of disclosures (measured in pages), quality of disclosures based on completeness of disclosures around four management activities, and quality of disclosures based on the spread of disclosures around possible disclosure themes. The authors found that about 66% of reports contained climate change related disclosures. The study also found that companies disclose more information through standalone reports than through annual reports and suggest that it is wise to spread the focus on different media, not only on annual reports. The authors found the increase in the percentages of reports that disclosed GHG emission information, information on actions and other narrative disclosures over time (before and after the UK ETS). The study finds that companies participating in the UK ETS were more likely to disclose climate change related information in annual reports, as well as the volume of those disclosures was bigger than within annual reports of non-participant companies. Based on the disclosure patterns, the authors suggest that "direct participants [of the UK ETS] sought to comply with pressures for economic fitness while also reducing [GHG] emissions" (de Aguiar and Bebbington, 2014, p. 237) as the ETS's objective was to encourage reduction of GHG emissions among in organisations without compromising their competitiveness, so monetary incentives were offered.

As in previous sub-section, studies analysed this sub-section focused on different countries, not particularly exploring the influence of the context, with only two studies (de Aguiar and Bebbington, 2014; Ieng Chu et al., 2013) providing insights into

regulatory incentives. Studies primarily utilized legitimacy theory to explain incentives, which influence managements' decision to disclose climate change related information. Three of the studies (Ieng Chu et al., 2013; Prado-Lorenzo et al., 2009; Stanny and Ely, 2008) found size effect on the volume of disclosed information. Gallego-Álvarez et al. (2011) found that companies with headquarters in countries that ratified the Kyoto Protocol are more likely to disclose information. However, the ratification of the Protocol requires implementation of policies on the country level, which might be different across different countries. Moreover, the lack of strong policy framework, the uncertainty about government actions, and the uncertainty about the marketplace does not encourage the change in accounting practice (Okereke, 2007). In fact, the decision to disclose is affected by the country's legal system and participation in the ETS, as was found by Luo et al. (2013). Indeed, the study by de Aguiar and Bebbington (2014) find the difference in instances and volumes of climate change related disclosures between companies participation and non-participating in the UK ETS, with participating organisations disclosing more. Therefore, not surprising the results of Prado-Lorenzo et al. (2009), which found that the commitment of the country, where the firm operates, to the environmental protection influences firm's decision to disclose climate change related information.

There are not many studies, which explored the factors driving voluntary disclosure in developing countries. The majority of the studies are focused on developed context (Luo et al., 2013). Among studies explored in this sub-section, only studies by Gallego-Álvarez et al. (2011), Ieng Chu et al. (2013), Luo et al. (2013) explored disclosures in developing economies. Ieng Chu et al. (2013) explored disclosures made by Chinese companies, while Gallego-Álvarez et al. (2011), Luo et al. (2013) differentiated between companies from developed and developing countries, where Luo et al. (2013) found that financial resources are more likely to be a constraining factor for companies from developing countries. Furthermore, the finding by Wegener et al. (2013) that the decision to disclose climate change related information is influenced by domestic investors rather than foreign institutional investors.

These findings suggest that for the analysis of managerial incentives for GHG emissions and climate change disclosures it is important to analyse the context of the country where companies operate, as it is likely to influence the reporting practice.

2.2.4 Studies on carbon disclosure strategies

This sub-section is focused on strategies that companies employed towards climate change related disclosures. One of the first studies was the study by Kolk and Pinkse (2005), which explored market strategies towards climate change. The study is based on qualitative data submitted to the CDP by 136 international companies. The authors explain that under flexible regulatory regime, companies can improve their business activities either through innovation or through compensation. Innovation suggests improvement of companies' assets, technologies, knowledge, while compensation involves transfer of GHG emissions. The authors distinguished corporate strategies by characterising them into six profiles, which are: cautious planners, emergent planners, internal explores, vertical explores, horizontal explores, and emission traders. These strategies, as per Kolk and Pinkse (2005), depend on managers' perceptions of the risks and/or opportunities related to climate change. Through the analysis of companies' responses to the CDP, the authors suggest that market-oriented climate strategies of most companies are at the early stage. Kolk and Pinkse (2005) argue that most of the firms can be characterised as cautious and emergent planners, who are still in a preliminary stage in implementing market strategies. The authors define cautious planners as those companies, which are preparing for action but with not much activity in different areas, while emergent planners are the companies that have some processes in order to develop a more comprehensive climate strategy, although they are at the early stage of implementing the organizational change. The analysis was conducted at the time when the Kyoto Protocol got sufficient support to get into force (signed by one of the biggest contributors – Russia). As the first phase of the Protocol started only in 2008, it is not surprising that the authors got those results, as the issue of climate change was still new to the most of the companies.

Habbitts and Gilbert (2007) analyses 50 sustainability reports of leading international companies, ten reports from each of the following geographical regions: USA and Canada, Europe, Japan, Asia-pacific, and South America in 2005 and 2006. Companies analysed in the study belonged to different industries: energy (oil, gas, and electricity), financial services, telecommunications and IT, consumer goods and pharmaceuticals, industrial and mining, and other. The authors investigate the types of reporting on climate change, to identify trends, to assess the quality of reporting, and to explore how organisations explain the challenges of climate change for reporting companies. The

researchers designed criteria to identify reporting, which they broadly classified into reporting on risks and on opportunities. The study reveals that most of the companies in the sample, report on climate change. According to the authors, many companies disclose information on steps companies undertaking to quantify, report and reduce GHG emissions. Surprisingly, most of explored reports do not elaborate on management commitment to climate change issue, and the small number of those that did disclose discussions were generally brief. The authors found that firms mostly report on potential opportunities rather than on financial risks, their companies might face. Thus, the authors also found that over 60% of companies reported on business opportunities related to emission trading and carbon credits, even companies from non-ratifying the Kyoto Protocol countries. Habbitts and Gilbert (2007) suggest that the reason might be that companies see climate change not only as a threat but also as an opportunity, or companies have not yet identified, explored or quantified risks related to climate change.

Ihlen (2009) explores how important climate change issue to companies and how companies treat the issue rhetorically. The study employs legitimacy theory and explores rhetoric within not-financial reports of 30 largest companies across different industries. The author argues that the construction of corporate social responsibility (CSR) programs can be seen as a strategy to reduce legitimacy gaps. The findings of the study reveal that climate change agenda is very high on firms agenda, however, the author found differences in attention between companies from different countries. The author suggests that companies oppose to the real change through emphasising their need to balance their economic, social and environmental responsibilities. To analyse disclosures related to climate change, the author conducted content analysis and counted the amount of times the companies mention climate change related terms. The author concluded that the amount the term is mentioned or the type of rhetoric does not indicate if the company is taking proactive approach in reduction of its environmental impact. The author suggest that companies influence the construction of discourses on climate change. However, according to the author, companies cannot construct those responses at will and they need to be perceived as legitimate in front of society. Construction of CSR programs, as per the author, can be an important strategy in order to do that. The author suggests that civil society needs to maintain a strong regulatory structure.

Weinhofer and Hoffmann (2010) investigate what measures companies take to reduce their emissions, what strategic objectives companies pursue, and conditions for those strategies. The authors focus their analysis on individual industry, in order to get detailed knowledge of companies' strategies. The study utilized CDP questionnaires submitted by electricity producers from 23 countries. The authors adopted three-stage approach: content analysis of CDP reports, cluster analysis to explore the CO_2 strategies (carbon compensation, carbon reduction, and carbon independence) adopted by firms, and statistical tests to explore firms' characteristics influencing the choice of the strategy. The authors found that out of three measures identified in relation to reduction of carbon emissions, most of the companies (54-64%) do not mention those in their reports. Overall, the authors found that most of the companies take long-term emission management measures, and only minority is taking short-term measures as compensation for emissions, or no measures at all. In regards to firms' characteristics, the authors found the difference between company's origin (EU, Japan and US) and the number of strategy types they are following. The authors suggest that this might be a result of the impact of regional climate change policies. They also found that larger firms with large GHG emissions undertake more activities to reduce their emissions.

Rankin et al. (2011) employs institutional governance theory to explore voluntary GHG disclosures in Australia. In particular, the authors used Griffiths and Zammuto's (2005) institutional governance framework to examine contextual features of international competitive advantage and illuminate motivations for voluntary corporate responses to climate change issues. The authors analysed 80 companies out of 295 firms participating in the S&P ASX300 index. Thus, the authors investigated hypothesised links between corporate GHG emissions disclosures, internal organisational systems and private regulations as well as explored the extent and credibility of voluntary carbon reporting in the Australian context. To measure credibility of GHG emissions disclosures in annual reports and environmental or sustainability reports, Rankin et al. (2011) designed an index based on ISO 14064-1 Greenhouse Gases. The authors found that 42.8% of industrial firms in the sample voluntarily disclose GHG emission information. Rankin et al. (2011) found a large variability in the extent and credibility of GHG emissions disclosures among the sample firms. The results of the study reveal that companies that disclose GHG emissions information are characterised by having environmental management system (EMS), quality governance systems, making publicly available disclosures to CDP, these companies are larger and operate in either

energy and mining or industrial sectors. The authors suggest that publicly considered high "emitters" industries are more likely to voluntarily report credible GHG emissions information. Rankin et al. (2011) suggest that firms are addressing multiple climate change risks and desire to maintain international and their specific competitive advantage. The authors found positive relationship between internal organisational systems and propensity to disclose information on GHG emissions and the extent and credibility of those disclosures. Rankin et al. (2011) found evidence of proactive corporate GHG emissions disclosures and see companies taking a pragmatic stance to maintain international competitive advantage and "green" firm specific advantage. They also suggest that companies recognise long-term impact of climate change on their survival and growth. The authors suggest that further investigation is needed to explore management practices and underlying motivations for proactive approach.

Hrasky (2012) is investigating whether Australian companies addressing carbon related issues in their contemporary environmental disclosures. It also explores whether companies employing specific strategies for disclosures, and corporate motives and actions related to carbon emissions reporting. The author explored accounting practices of top 50 Australian companies through legitimacy lens. The author differentiates between two legitimating tactics. The first tactic behavioural management approach (as per Kim et al., 2007) or substantive (as per Milne and Patten, 2002), which suggests that disclosure decision is a way for disseminating information about particular actions aimed at reduction of the carbon footprint. The other approach is symbolic management approach (as per Kim et al., 2007; Milne and Patten, 2002), which aimed to create an impression of environmental responsibility (see Hrasky, 2012). The study utilized content analysis of companies' annual and sustainability reports from 2005 to 2008 years. The author found that companies are making more disclosures which, according to Hrasky (2012), is consistent with legitimacy theory as during explored period of time the social concern about environmental issues was high. Hrasky (2012) observes an emphasis on symbolic disclosure strategy in particular among less carbon-intensive sectors, which is consistent with pragmatic approach in establishing legitimacy. The author suggests that for change there might be a need for regulatory response to encourage more environmentally responsible activity. In relation to carbon-intensive sectors, the author found changed emphasis towards behavioural disclosures and suggests that there is a change towards a moral legitimation strategy. However, the author warns that this change may not necessarily reflect the real change, as it might be

just the mask to symbolic strategy in order to reduce scrutiny. Hrasky (2012) also suggests that if carbon-intensive companies report information that is easy to disclose, then there is a need for incentives that would encourage firms for long-term strategies.

Pellegrino and Lodhia (2012) explored whether climate change and carbon pricing had an impact on climate change disclosures among Australian companies in mining industry. The authors employ legitimacy theory to identify and examine variations in corporate disclosure legitimising strategies through variety of media. Pellegrino and Lodhia (2012) also explored how the issues of climate change and carbon pricing changed the dynamics of environmental disclosures. The study employs multi-case study for in-depth investigation, focusing on four key bodies in mining (companies and industry bodies). The authors conducted content analysis of different media: annual reports, sustainability reports, media releases, websites, CPRS[1] green paper submissions, and videos. Pellegrino and Lodhia (2012) suggest that climate change was an accelerator for large emissions-intensive organisations in Australia to pursue legitimising strategies. They suggest that companies employ strategies proposed by Lindblom (1993)[2] to differing degrees. Here, as per Pellegrino and Lodhia (2012), the key bodies utilize a variety of media of communication when utilizing corporate legitimising strategies. The authors argue that legitimising disclosure strategies are pursued at an industry level rather than at individual company's level. The authors found that mainly used legitimacy strategy on industry level is altering society expectations, or in other words lobbying. Pellegrino and Lodhia (2012) suggest that industries undertake lobbying on behalf of individual companies, which as suggested by the authors demonstrate the importance of stakeholder networks. On the other hand, according to the authors, companies employ disclosure tool to demonstrate consistency with societal expectations. Thus, Pellegrino and Lodhia (2012) found that companies do not directly alter societal expectations, they rather lobby through industry bodies. The authors are concerned with the fact that carbon reporting is driven by legitimacy reasons and suggest that more comprehensive reporting regime should be developed.

Luo et al. (2012) investigate what strategies companies employ in response to climate change. The researchers employ legitimacy theory to understand how companies

[1] Carbon Pollution Reduction Scheme – Australian policy paper.
[2] Lindblom (1993) identified four legitimising strategies companies employ: informing about real changes made, altering society's perceptions, altering society's external expectations or manipulating society's perceptions.

interpret and respond to the pressures imposed by governments, communities and other external groups. The authors analysed CDP 2009 reports of 291 firms from the Global 500 covering such sectors as Consumer Discretionary, Consumer Staples, Energy, Health Care, Industrials, Information Technology, Materials, Telecommunications, and Utilities. The authors found that most of the companies disclose information in response to climate change issues. Luo et al. (2012) found that larger companies tend to disclose voluntarily climate change information. At the same time the authors did not find any relationship between disclosures and Kyoto Protocol ratification, which is different from earlier studies, such as Freedman and Jaggi (2005) and Prado-Lorenzo et al. (2009). The results of the study reveal that companies operating under emission trading scheme are more likely to disclose information on carbon dioxide. At the same time, the results suggest that financial market pressure or the information needs of market participants do not affect the decision for disclosure, but rather attitudes of the public and the government. Luo et al. (2012) suggest that this strategy of impressing the public and regulators instead of accountability to investors might potentially mean that disclosures are not of a good quality. The authors call for policy makers to introduce regulations and market mechanisms to reduce apathy among investors in relation to climate change as a result to encourage firms to reduce their carbon emissions.

Luo and Tang (2014) went further compared to previous studies. The study investigates whether disclosed information related to carbon emissions reflects the actual carbon performance. Using signalling theory, the authors analysed CDP reports submitted by 474 large companies from the US, the UK and Australia. The authors used Carbon Disclosure Leaders Index to measure the level and the extent of carbon disclosures, which was based on the content analysis. To measure carbon performance the authors used the level of carbon emissions, which measured carbon emission performance and carbon mitigation performance. Luo and Tang (2014) found that companies with good carbon performance, especially if company achieved larger carbon reductions, tend to disclose more information related to carbon emissions. The authors suggest that good performing companies tend to be more transparent to differentiate themselves from poor performers. This is consistent with Prado-Lorenzo et al. (2009), which found that companies with high environmental performance disclose more information on climate change. While poor performers, as per the authors, cannot mimic this behaviour, and as a result send false signals. The authors suggest that CDP is useful mechanism allowing the decision making, as CDP reports are restricted to possibility to manipulate

performance results. The authors suggest that voluntary disclosures should be regulated and there is a need for a standard format and content, which would stimulate consistent disclosures.

Thus, earliest studies found that market-oriented climate strategies of most companies were at the early stage, suggesting that most of the firms were cautious and emergent planners, as per Kolk and Pinkse (2005). Later study found that most companies started to report on potential opportunities related to emission trading and carbon credits, including companies from non-ratifying the Kyoto Protocol countries (Habbitts and Gilbert, 2007). Later study Luo et al. (2012) found no relationship between belonging to the Kyoto ratified country and disclosures, suggesting that ratification on itself is not a significant factor. However, Hrasky (2012) observes an emphasis on symbolic disclosure strategy in particular among less carbon-intensive sectors, which as per the author, is consistent with pragmatic approach in establishing legitimacy. Although, the author notes that symbolic approach to legitimacy may not necessarily be effective for environmentally sensitive and visible companies.

Hrasky (2012), Ihlen (2009), Luo et al. (2012), Pellegrino and Lodhia (2012) employ legitimacy theory to explain climate change disclosures. The authors suggest that companies construct their responses in order to be perceived legitimate in front of society and the government. However, companies themselves do not alter society's expectations, it is rather done at the industry levels, as was found by Pellegrino and Lodhia (2012). However, companies, as per the authors, use disclosure as a tool to demonstrate consistency with societal expectations. Rankin et al. (2011) explored the strategy from different perspective, through institutional governance theory, and found that companies recognise long-term impact of climate change on their survival and growth and they are taking a pragmatic stance to maintain international competitive advantage and "green" firm specific advantage. While, the study by Luo and Tang (2014) use signalling theory, which found that good performing companies tend to be more transparent to differentiate themselves from poor performers.

Most of the studies analysed in this sub-section investigated disclosure strategies across different countries. Some studies focused on a specific country with developed economy (Hrasky, 2012; Pellegrino and Lodhia, 2012; Rankin et al., 2011), while other studies (Habbitts and Gilbert, 2007; Ihlen, 2009; Kolk and Pinkse, 2005; Luo and Tang, 2014; Luo et al., 2012; Weinhofer and Hoffmann, 2010) compare disclosures across

different countries, with developed and developing economies. The comparison of disclosure practices allows identifying differences across countries and content analysis, which is mainly applied in those studies, is very useful. However, this approach does not allow understanding the impact of the context on a particular practice. Especially taking into account that even ratification of the Protocol does not influence climate change related disclosures, as was found by Luo et al. (2012). Therefore, it can be suggested that in-depth investigation of the context where the companies operate would allow to appreciate the reasons and motivations, as suggested by Rankin et al. (2011), behind strategies adopted by the companies in response to climate change.

2.3 Attitudes towards and perceptions of environmental accounting and auditing and their regulation held by accountants and managers

This section analyses the studies on the attitudes of preparers of GHG emissions and climate change related information, such as accountants and managers, towards environmental issues. There are only few studies which explore the attitudes of preparers towards GHG emissions, therefore, it was decided to review the literature that focuses on perceptions of environmental issues in general, as carbon emissions and climate change are the part of environmental issues.

2.3.1 Studies on accountants' perceptions

One of the first studies that made an attempt to understand perceptions of environmental accounting and auditing by accountants was the study conducted by Bebbington et al. (1994). The study was based on the previous study by Gray et al. (1993), which explored the meaning of 'environmental accounting' in practice and found that accountants were rarely involved in environmental issues. The authors analysed the research question through the theory of planned behaviour. The study surveyed finance directors of the UK companies in 1992, when there was increased awareness in society about the importance of the natural environment and companies' impact upon it. The authors explain that the focus on finance directors rather than solely on accountants allowed them to explore attitudes of the company as a whole. The authors noted that the emphasis in the research on large companies might involve a response bias. However, it can be suggested that their approach was appropriate in terms that large companies were more likely to be involved in new practices. The results of the questionnaire revealed that accountants had positive attitudes towards innovations, particularly towards

environmentally related innovations. Although accountants were aware that environmental issues would affect their practice, environmental accounting was absent. The authors found that there was a gap between respondents' attitudes and their actions, who did not have much knowledge about the possibilities of environmental accounting. Based on the Fishbein and Ajzen's theory of planned behaviour, the authors suggest that situational and internal constraints impede accountant from translating their attitudes into appropriate behaviour. In relation to legal requirements, Bebbington et al. (1994) found that most of financial directors see the lack of these requirements and financial directors think that this as well as insufficient demand for the information are the reasons for the absence of environment related disclosures.

Gray et al. (1995) investigates the (non-)role of accountants and accounting in the response to environmental matters. Exploring the relationship between accounting and organisational change, the authors suggest that organisational change may require the change in accounting practice, or accounting may change leading to the change in organisation, or both can happen. The authors see Laughlin's (1991) model[3] of organisational change very useful, as the authors are interested in dynamics of the process. As per Laughlin's model there are five types of organisational change: "inertia" (no change), "rebuttal" (deflect the change to return to inertia state), "reorientation" (change cannot be rebutted, so it is accepted), "colonization" (change is forced upon organisation) and "evolution" (change is accepted without coercion). The authors conducted 27 semi-structured interviews within extracting, processing and manufacturing sectors in the UK and New Zealand. Gray et al. (1995) also analysed published reports, attended workshops, hold consultations with organisations, correspondence, action research and questionnaires. Thus, the authors employed quite diverse methods in the analysis. The authors suggest that even though most of the companies preferred to rebut a disturbance, they could not be seen as doing that. Gray et al. (1995) found that most of the companies could be captured under "reorientation" category, as they introduced environmental measures, which did not involve substantial changes. They found that commonly given reasons to adopt green policies were "Direct Business Reasons", such as long-term strategy, business survival, marketing or PR opportunity, economic savings or competitive advantage. Companies were also

[3] Laughlin (1991) model refines and develops the complexity organizational change (Gray et al., 1995). According to the authors, Laughlin see organizations "as change-resistant but nevertheless subject to environmental 'disturbances' " and these disturbances "lead to transitions and/or transformations" (Gray et al., 1995, p.215).

influenced by “colonization” type of change, as the second most important reasons for organisations to respond to environmental issues were suggested "Indirect Business Reasons", such as fear of prosecution, exposure to public criticism, a fear of accidents, the impact on staff motivation and/or morale. Less number of companies were classified as being evolutionary, although some companies explained that their reason for response to the environmental issues were “Personal and Social", such as local community involvement; personal concern of management and employees, action of environmentalist groups and culture. Thus, the authors found that at best companies were reorienting towards new practice. However, authors did not find accountants’ involvement in the process at those early years.

Lodhia (2003) investigates the views of Fiji's accounting practitioners about their role in the environmental management accounting practice and disclosure of environmental information. The author argues that analysis of environmental accounting in developing country is useful as it allow exploring if differences in economies between developed and developing countries lead to differences in the environmental accounting practices. The author attempts to develop a descriptive theory of environmental accounting practice in Fiji, which then could be compared with international studies. The study employs interpretive approach to appreciate the views of respondents. The author conducted 19 semi-structured interviews with practicing (accountants working within chartered accounting firms) and corporate accountants (accountants working within industries). To understand how practicing accountants are ready to handle environmental issues the author did not define the meaning of environmental accounting concepts and tried to find the respondents' own views. The author claims that environmental awareness among practicing accountants increased from early 1990s. Accountants mainly had a reasonable understanding of what environmental accounting was and felt that there was a role for them in environmental activities. However, the author finds that practicing accountants are not ready to broaden their conventional role. In relation to corporate accountants, the author states that they were unaware of their possibilities of how to get involved in environmental issues and environmental disclosures, although they indicated that environmental issues were important for their organisations. However, practitioners believe that nothing will change and the status quo will remain if disclosure of environmental information will remain voluntary. The author suggests that to change the current situation there is a need for international mandatory standards on environmental accounting because accounting standards in Fiji

are similar to standards of other countries. The author explains that this is because of the lack of resources and expertise, similar to other developing countries. The author suggests that efforts in accountancy institutes to take into account environmental issues would influence the practice in Fiji.

Kuasirikun (2005) examines attitudes of Thai accounting professionals towards social and environmental accounting and suggests how accounting might contribute towards solving social and environmental issues. This study particularly paid attention to the accounting practice in the Thai context, as it allowed appreciating professional perceptions and theorising how accounting could be changed in political and institutional terms. Thus, the author explored political and institutional factors, which accountants thought constrained the development of social and environmental accounting in Thailand. The study used two-stage approach. To generate preliminary insights the authors constructed questionnaires and to analyse further the author conducted in-depth interviews. The study found that accountants, auditors, and accounting-related professionals have positive attitudes towards social and environmental accounting. However, these positive attitudes were not reflected in disclosure of social and environmental information. The respondents claimed that corporate responsibility information is too sensitive for disclosure, and that the information was disclosed selectively to establish 'good' image of business practice. Accountants in Thailand felt that there was a role for accountants in environmental issues, however, they were unsure how they could change organisation's practices. Accountants argued that they were dependent on the management of their companies. According to the authors, the results of the study suggested that to transform positive attitude towards environmental accounting into practice there was a need to include social and environmentally-concerned representative into accounting standards boards. As per the author accountants believed that there was a major role for government to make companies more socially and environmentally responsible by introducing social and environmental legislation, including compulsory social and environmental accounting reports. The author suggested that more holistic model of the development of accounting practice had to be adopted. Kuasirikun (2005) suggested that the accounting standards board had to collaborate with governmental agencies, in order to maintain the consistency with legislation. The author emphasised that the role of accounting and of accountants would not change dramatically in terms of gaining scientific knowledge, but rather accounting should serve as a reporting tool to

demonstrate that companies comply with social and environmental requirements. Kuasirikun (2005) suggest that auditors should provide verification of disclosed information. The author emphasised the importance of analysis of accounting practice in a wider institutional and political change. Kuasirikun (2005) argued that only through collaboration with institutional members and governmental parties, accounting could contribute to the balanced development of the economy and society.

Informed by reflections on Gallhofer and Haslam (2003) critical perspective on accounting Kamla et al. (2012) explores Syrian accountants' attitudes towards social accounting. The authors aimed to examine how globalisation and the local context, in particular political, cultural and socio-economic aspects, influenced accountants' perceptions of social accounting. The authors conducted in-depth semi-structured interviews in 2002 and 2005 in order to reflect the changes in their views over that period. In the research, the authors found that interviewees considered accounting more as a technical tool and felt that the main purpose of accounting was 'to provide "objective" and "financial" information for decision-making' (Kamla et al., 2012, p. 1181). The authors found that accountants were aware of a broader social role for accounting, however they could not see themselves as leaders in development of this new role. The study found that accountants relied on state intervention or new legislation for development and implementation of social accounting. According to the authors, accountants also believed that international cooperation might help in development of social accounting, but the authors warned that before adopting any international standards Syria should carefully think whether Anglo-Saxon practice is able to reflect Syrian realities. The authors suggest that standards should at least be adapted to the Arab-Islamic context.

Lovell et al. (2010) investigated a more specific environmental accounting problem, which is an accounting for emission allowances[4]. The authors surveyed financial statements of large GHG emitters, which was followed by the telephone interviews with

[4] One of the instruments of the market-based policy is "the creation of markets where emission rights are traded" (Bebbington and Larrinaga-Gonzáles, p. 703, 2008). The emission trading scheme (ETS) is designed to enable reduction of greenhouse gases at the lowest cost (DECC, 2013). An example of a cap and trade system is the European Emission Trading Scheme (EU ETS), which commenced in 2005. In that scheme, the cap is an absolute total of emissions allowed to be emitted by all participants, which is set by the European Commission (DECC, 2013). Under the EU ETS, countries of the Union are required to reduce their emissions by 8% below 1990 levels. Companies get limits as a set of allowances. Participating companies are obliged to monitor and report their emissions and surrender allowances to cover their limit. Those companies that emit more than they are allowed will have to buy allowances from those companies that emit less than their allowance (DECC, 2013).

accountants of those organisations. Surveying financial statements demonstrated the diversity in accounting for GHG emission allowances. The authors investigated the views of accountants about the reasons for this diversity and found that the main reason was availability of different approaches and absence of any guidance by regulatory accounting bodies. In fact, this is consistent with the analysis of the studies that focused on carbon disclosure performance, presented in sub-section 2.2.2. Lovell et al. (2010) found that accountants are uncertain of how to treat "emission allowances", whether it is a financial instrument, a compliance instrument, or something else. Most companies, according the authors, would like a mandated guidance from standards setters, which would allow to reduce the complexity and allow being fairly compared with other companies. The authors also found that because there are no any requirements form standards setters, the respondents rely on auditors' advice. The authors recommended to accounting standard setters to issue a clear guidance on emission allowances.

Lovell et al. (2013) is interested in accountants' perception of increasing society's concern about climate change and the role that accountants are playing in influencing how climate change should be viewed. The authors used findings from the survey of disclosed financial statements, which were obtained in the study conducted by Lovell et al. (2010). Based on the Lovell et al.'s (2010) findings that there is low level of disclosures related to GHG emissions among EU companies and that companies disclosing this information use different practices, the authors conducted five follow-up interviews to investigate possible reasons for that non-disclosure. The researchers also conducted content analysis of the response letters to IASB 2011 Agenda Consultation to understand respondents' attitudes towards emission allowances. The authors found that companies fail to provide key data that is likely to be relevant to investors, as evaluation of emission allowance assets and liabilities at zero does not reflect the risks the company might be facing. The authors state that the problem arises because of the classification and measurement systems for climate change mitigation. Valuating emission allowances at nil value, companies conceal information about risks their companies might face. The authors found that emission allowances are very material, yet they are not disclosed. The authors call for the guidance from standards setters for accounting for emission allowances. The authors suggest that such institutions as the IASB and EU ETS branch of the European Commission should collaborate to find the solution, as, according to the authors, the lack of dialog about carbon financial accounting between these institutions might be a reason for inaction. The study also

demonstrated the role of accounting in influencing organisational and social processes. Although, the authors claim that the role of financial accounting for carbon allowances had been to obscure the financial effect of carbon markets. The authors suggest that financial accounting limits the effectiveness of EU ETS policy and carbon markets, as it does not allow taking into account costs associated with carbon emissions.

The studies analysed in this sub-section explored perceptions of accountants towards environmental issues. Equally, studies in this section explore attitudes of accountants within developed and developing countries. First studies found the discrepancy between accountants positive attitudes and the actual practice (Bebbington et al., 1994; Kuasirikun, 2005; Lodhia, 2003). Gray et al. (1995) found that at early years (1990s) at best companies were reorienting towards new practice, although accountants were not involved in the process. More recent studies (Lovell et al., 2013, 2010) found involvement of accountants into the specific process of accounting for carbon allowances. The authors found that even for accounting of emission allowances companies employed financial accounting, which historically was not designed to take into account environmental issues. Not surprising then the call of the authors, as Kamla et al. (2012), Kuasirikun (2005), Lodhia (2003), Lovell et al. (2013, 2010) for international mandatory standards on environmental accounting. Kamla et al. (2012) and Lodhia (2003) explain that developing countries rely on international standards, however Kamla et al. (2012) warns that international standards should be carefully analysed before being embedded into particular context, as particularities of a specific context should be taken into account. Furthermore, Kuasirikun (2005) and Lovell et al. (2013) suggest that standard-setters should collaborate with regulators, so standards were consistent with regulations.

2.3.2 Studies on managers' perceptions

This sub-section reviews the views of managers about environmental issues. The perceptions of managers are also important, as managers making decisions on whether company has to take into account their environmental impacts and whether this information should be disclosed to company's stakeholders. As was also found by Kuasirikun (2005) accountants were unsure how they could change organisation's practices as they were dependent on the management of their companies.

One of the first studies that investigated the perception of environmental issues by managers was the study by Jaggi and Zhao (1996). In particularly, their study explored the attitudes of managers and professional accountants towards environmental performance and environmental disclosures within Hong Kong companies. The authors employ positive approach to explore the relationship between manager's attitudes and actual environmental reporting. The study utilize questionnaires to seek the views of managers and accountants. The response rate for the survey was 28% for companies and 35% for CPA firms (professional accountants). The authors found that respondents had highly positive attitudes towards environmental protection (managers – 85%, CPA firms – 84%); however, they were not involved in the environmental issues. Managers believed that environmental disclosures and environmental contribution would allow their companies to improve their public image. This result is similar to the result obtained by Gray et al. (1995). Most of CPA firms responded that they could see a new role for accountants. The authors suggest that managers disclose information only when they can benefit from it. Furthermore, the authors found that managers from utility and industrial sectors, compared to properties, consolidated, finance sectors, believed that they had a higher responsibility for environmental disclosures. According to the authors, even though managers have positive attitudes towards environmental protection, the review of firms' disclosures reveals the gap between managers' views and the actual disclosure. The authors found that information disclosed was too brief, and there was no information about amount of pollution, money spent on pollution control or plans to reduce pollution. The study revealed that most of the respondents among professional accountants thought that voluntary reporting was preferable, however they felt that guidance was necessary to deal with environmental issues. The authors suggest that disclosed information should be verified and call for development of guidance by accounting professional bodies.

Deegan and Rankin (1999) explore the views of users and preparers of annual reports about necessity and usefulness of environmental performance information. The authors investigate whether there is an expectation gap in environmental reporting in the absence of any regulation in Australia. Deegan and Rankin (1999) used mail questionnaires, which were designed separately for the users and prepares of annual reports, the response rates for the survey were 26% and 25% respectively. The results revealed that both users and preparers thought that the environment was important. The authors found that 67.8% of users were searching for the environmental information in

annual reports, however, only 24.1% of preparers published environmental information in their reports, admitting that information provided was limited. The majority of surveyed preparers stated that they had no intentions to disclose environmental and social information in the future. Disclosing companies focused on environmental contingent liabilities, and restoration and rehabilitation policies. However, according to the authors, this information was required by the governmental. Authors found that users perceived environmental information more important than preparers did, with the exception of mining firms, whose perception were not different from users' views. However, financial information was still perceived to be more important than social and environmental information among users and prepares. In relation to the guidance, both preparers and users felt that legal requirements would be the most important factor influencing the disclosure decision. The authors found that preparers of annual reports were neutral in relation to the voluntarily disclosures, while users wished the guidance to be provided by professional accountancy bodies and by the government. The authors concluded that there was a gap between users' and preparers' perceptions of the necessary level of environmental performance information to be disclosed. The authors explain that gap through the lens of the legitimacy theory. The authors suggested that most of the organisations were not adequately addressing society's expectations regarding their social performance, as well as disclosure of this information. Deegan and Rankin (1999) suggest that companies operating within industries with more considerable impact upon environment and on society might be more aware of the society's expectations and as a result, there is smaller gap between society expectations and organisations' perceptions.

Woodward et al. (2001) presents empirical evidence on the views of executives on CSR. The study employs organizational legitimacy, political economy of accounting and accountability in the context of a stakeholder-agency framework. The authors present organizational legitimacy as the way to investigate aspects of corporate 'social' behaviour, which suggests that business operates under mandate from the society. They suggest that this concept is a *reaction*. On the other hand, the authors suggest that companies might provide information from managerial perspective to influence societal opinion, which they call a political economy concept. This concept is *proactive*. The study tries to investigate whether CSR is a reaction to external pressures or CSR is driven internally. The authors also explore to what extent CSR activities restricted by profit considerations. The authors conducted semi-structured interviews with senior

executives in eight major UK corporations. All respondents are similar in their views that the natural environment is an area of corporate responsibility. According to the authors, interviews showed that companies recognize society's expectations of firms' social and environmental performance and pressures imposed on them. The authors found that respondents mostly responded to those pressures in a reactive way, so according to authors, companies attempt to present policies the way they are accepted by the society. The authors concluded that overall interview results suggested that interviewees had either "*belief* ... that CSR is an *actual* proactive goal of their company, or a *desire* at least *to be seen* in that light by society" (Woodward et al., 2001, p. 387). According to the authors, companies in such sectors as Banking, Chemicals, Food Retailing, and Packaging, Paper and Printing sectors are very concerned with their public image. The authors found evidence that supports organisational legitimacy and political economy perspectives. However, Woodward et al. (2001) suggest that it is very difficult to determine which of those perspectives dominates.

O'Dwyer (2002) explores managerial perceptions of the motives for CSR, presence and absence of disclosure. The study uses legitimacy theory[5] to interpret motivations for those disclosures. The author conducted 29 in-depth personal interviews with senior executives from Irish companies. The author suggests that as the state of legitimacy[6] is rarely reached, corporate social disclosures may only occasionally be a part of that process. Managers, according to the author, perceive those disclosures as the source of societal scepticism, so they do not consistently report on their corporate social performance. Some manages claim that disclosure does not legitimise their existence so the CSR is restrained, at the same time some managers continue using voluntary CSR. The author suggests that because managers do not consider legitimacy as appropriate legitimation vehicle, the usage of CSR lays outside the legitimacy theory explanations. O'Dwyer (2002) did find support to the statement that legitimacy theory driving CSR and he suggests that specific national economic and social factors could have influence his findings. The author doubts that voluntary approach for CSR is sufficient and calls for regulations to endorse more extensive and higher quality of CSR so interests of the wider society could be served.

[5] According to the Legitimacy Theory "organisations continually seek to ensure that they are perceived as operating within the bounds and norms of their respective societies, that is, they attempt to ensure that their activities are perceived by outside parties as being 'legitimate'" (Islam and Deegan, 2008, p.853).

[6] Lindblom (1994) defines legitimacy as a "condition or a status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part" (Islam and Deegan, 2008, p.853)

O’Dwyer (2003) followed O’Dwyer (2002) study. The perspectives obtained from O’Dwyer, (2002) were used to understand the meaning of CSR for corporate managers, why managers had these conceptions about CSR, and how this affected social accountants’ attempts to change business practice. O’Dwyer (2003) focused on managerial perspectives of CSR dimension of the corporate accountability framework. The author suggests that managers understand CSR in a narrow way that the CSR should serve shareholders' wealth maximisation. According to O’Dwyer (2003) some managers claim that structural constraints imposed on them prevented them from interpreting CSR in a broader way. O’Dwyer (2003) found that managers believe that their own positive attitude towards CSR would help them to overcome that narrow vision. The author states that because of the complexity of CSR, its perception by managers is in contradiction. Most managers claim that there is an obligation in front of society but at the same time, they insist that CSR should help to achieve economic goals. The author suggests that managers may find that CSR may be as difficult to understand as to apply. O’Dwyer (2003) suggests that voluntary approach might not succeed in broadening CSRs of companies considering structured pressures, which managers claim to have. O’Dwyer (2003) calls for social accountants to get involved through negotiations of companies’ responsibilities with the development of mechanisms, which would allow companies to report those (non-)achievements.

Collison et al. (2003) investigate the views of the UK managers from environmentally sensitive industries (power, water, minerals, including oil and gas, construction, chemicals, food and brewing) regarding the impact of positive and negative 'news' on their stakeholders. The author obtained 29% response rate to the questionnaire addressed to environmental managers; although, among respondents were also company secretary, finance director, risk manager, health, safety and environment manager, and investor relations manager. Most of the companies recognised that their firms have the potential to pollute. The authors found that 69% of respondents informed their shareholders about improvements in companies' pollution control, although most of the respondents did not believe that shareholders were interested in this information. The respondents perceived that environmental information was more important to regulators, local communities, pressure groups, customers, and only then to shareholders. Overall, authors suggested that both small and large companies needed to develop their awareness of the importance of environmental issues. Authors suggested

that because financial transactions do not capture environmental costs managers do not see shareholders as important users of environmental information.

Al-Khater and Naser (2003) explore various users' perception of corporate social responsibility and the accountability concepts of Qatari companies. To answer that question the authors conducted questionnaire survey of accountants, external auditors, academics and bank officers. The authors used positive theoretical perspective. The authors found that respondents viewed the provision of information to shareholders, investors and creditors as the main purpose of disclosing social and environmental information. However, they also felt that large companies should be accountable for their social and environmental impact in front of society. As well as Deegan and Rankin (1999), the authors found that respondents favour separate section in annual reports for disclosure of corporate social information or within the board of directors' statement. Besides, they favour monetary and non-monetary forms of disclosure. The authors also found that accountants, external auditors, academics and bank officers believe that disclosure of social and environmental information should be encouraged by law rather than being enforced by authorities.

Belal and Owen (2007) attempt to understand and critically examine the views of corporate managers about social reporting in Bangladesh. This would allow, according to the authors, to find driving forces of current and future prospects of CSR. To examine managers' perception the authors conducted in-depth semi-structured interviews with managers from 23 Bangladeshi companies. Most of the respondents were agree with the need for CSR, and considered shareholders as the most important stakeholder group. The study found that most of the respondents did not apply social accounting standards, as they believed that Western developed standards are not readily applicable to specific Bangladesh context. The authors found that CSR in Bangladesh is motivated by desire to improve corporate image and to manage the views of economically powerful stakeholders. Belal and Owen (2007) found that multinational companies are influenced by their parent companies, investors, international organisations, while domestic companies – by international buyers. The authors suggest that a key motivating factor for disclosure, organisational legitimisation, is driving reporting initiatives. The authors argue that the accountability needs of economically less powerful stakeholders should be addressed directly as external driving force is less effective. Belal and Owen (2007) find that corporate managers claim that the major problem of reporting standards is their

focus on interests and demands rather than addressing particular social or environmental problems in such developing country as Bangladesh. The authors claim that Bangladesh is not ready to focus on standardization because standards would displace attention from major problems, while what is needed, according to authors, changes in governmental institutions, "such as establishing the rule of law, empowering civil society organisations and promoting free trade unions" (Belal and Owen, 2007, p. 489). According to authors, standards and disclosure of information is only part of the process, which appeases Western economic interests.

Kuznetsov et al. (2009) investigated attitudes of executives of Russian companies towards CSR. To understand managers' attitudes, the authors used questionnaire survey, which were analysed through legitimacy lens. Kuznetsov et al. (2009) employed a broad definition of CSR, suggested by Waldman et al. (2006), where CSR defined as "actions that go beyond the immediate legal requirements of the firm" (Kuznetsov et al., 2009, p. 38). The authors found that most managers do not consider CSR as contemporary issues in Russia. CSR is perceived as a slogan rather than a strategy, as well as interpretation of CSR in Russia differs from Western understandings and has different focus. For, example, managers define CSR as payment of taxes, creation of employment, abiding the law. The authors suggest that for most of the Russian firms "the legitimacy challenge… is… to establish a consensus where business can be seen as an honourable and acceptable activity that will command respect and support from wider society" (Kuznetsov et al., 2009, p. 43). Managers see financial rather than social and environmental performance influencing the public image of the company and do not think that public is interested in CSR. On the other hand for firms with high public visibility positive social image is more important. The authors conclude that through creation of productive firms that provide real jobs and generate wealth, companies want to demonstrate their independence from the government and hope to build the social legitimacy of business as honourable and respectable occupation. The reason for this type of legitimacy might be because during 70 years of communist propaganda business was presented as "rapacious and immoral enterprise that exploited the working class and impoverished the third world" (Kuznetsov et al., 2009, p. 44).

Bhattacharyya (2011) aims to understand attitudes of Indian corporate managers towards social and environmental accounting within Indian context. The author wanted to find if culture, ethics, education and law affect perception of environmental

management. The study used questionnaire survey to gain initial insights, which then could be further explored through in-depth interviews in other studies. The obtained response rate was very high and comprise of 89%, possibly because questionnaires were distributed in person through relatives and friends of the author. The author found that respondents are concerned about environmental issues. However, as some studies discussed above, the author suggests that respondents motives towards environmental issues oriented more economically rather than morally. The author also finds that respondents believe that companies should be accountable for their practice. Respondents favour specific issues in environmental accountability, such as acquisition of international standards, GHG emissions, consultations with stakeholders for defining environmental policy, stand-alone environmental reporting and compliance with environmental regulations. The author finds that corporate managers in India believe that companies should be accountable for their social and environmental practice and they support enforcement of SEA standards by government.

Kuznetsov and Kuznetsova (2012) investigate the attitudes of Russian managers towards CSR as a proxy for business legitimacy. The authors suggest that Russian companies are in "legitimacy trap" (Kuznetsov and Kuznetsova, 2012, p. 39). Thus, according to the authors firms need to overcome the disadvantage image they have because of "unfair" privatization and at the same time to protect themselves from state interventions, which responds to society's attitude toward business. The aim of the study was to explore whether findings from developed countries can be applied to transitional economies, such as Russia. The authors conducted descriptive survey, which was pretested with two managers and experts. Russian managers from different sectors responded to the survey, with response rate of 26 percent. The results of the study revealed that managers did not regard CSR as relevant in modern Russia and do not see it as a priority. According to the authors, for many Russian firms CSR is not a strategy but rather is a slogan and CSR does not go beyond standard legal requirement. Managers do not believe that CSR can protect them from state intervention. The authors also found that most of Russian managers think that economic conditions are not right for them to take on more social responsibility. Managers see financial issues as the main constrain and believe that legal system should provide more incentives. Thus, according to the authors managers do not see CSR as a legitimacy tool. However, according to Kuznetsov and Kuznetsova (2012), this does not imply that managers form Russia are less concerned with legitimacy than managers in developed countries. The authors

suggest that perceptions of “appropriate” business activities are changeable during different stages of history of the country. The authors suggest that strengthening of Russian institutions might help in acquiring attitudes to CSR as in developed countries.

Thus, this sub-section explored studies, which explored managers’ perceptions of environmental issues. As per Woodward et al. (2001) and Bhattacharyya (2011) managers believed that the natural environment is the area of corporate responsibility, and as per Jaggi and Zhao (1996), Deegan and Rankin (1999), O’Dwyer (2003), Belal and Owen (2007) and Bhattacharyya (2011) managers have positive attitudes towards the protection of the environment. However, the studies by Jaggi and Zhao (1996) and Deegan and Rankin (1999) found gap between attitudes and actions. Although, managers informed their shareholders about improvements in companies' pollution control, they did not believe that shareholders were actually interested in this information, as per Collison et al. (2003). As per Kuznetsov et al. (2009) even society in Russia is not considered to be interested in CSR. Here not surprising the finding by O’Dwyer (2002) that managers perceive disclosure of corporate social information as the source of societal scepticism, so managers avoid engaging consistently in CSR. Studies by Deegan and Rankin (1999), found that financial information is more important for managers, and the understanding of CSR as the tool for shareholders' wealth maximisation, as per O’Dwyer (2003), prevented managers from interpreting CSR in a broader way. Kuznetsov et al. (2009) found that managers in Russia also interpreted CSR differently, with focus on regulatory requirements. This also supports Collison et al. (2003) suggestion that there is a scope for further development of managers’ awareness of the importance of environmental issues. Furthermore, Kuznetsov and Kuznetsova (2012) revealed that Russian managers did not consider the CSR relevant to Russian companies. The quantitative approach in the study by Kuznetsov and Kuznetsova (2012) does not allow understanding in-depth why Russian managers hold those attitudes. In fact, this particular study considers that the particular context plays a significant role in adoption of new practices. This was also evident from the studies by O’Dwyer (2002) and Belal and Owen (2007).

The studies by Jaggi and Zhao (1996), Deegan and Rankin (1999), Al-Khater and Naser (2003) and Bhattacharyya (2011) found that respondents announce the need for guidance and standards. O’Dwyer (2002) also suggests that voluntary approach is not

sufficient and calls for regulations, which would allow more extensive and higher quality of disclosures on corporate social performance.

2.4 Studies on perceived motivations for environmental disclosures

It is also important to understand motivations behind decision for companies' environmental reporting. This section focused on analysis of the literature, which explores the managers' views on SEE reporting.

Larrinaga-González et al. (2001) questioned whether environmental accounting is utilised to control the environmental politics in a secretive accounting context. The authors applied the theories of organisational change developed by Laughlin's (1991) and Gray et al. (1995). The authors analysed nine Spanish firms from different industries for their case study. The authors conducted 15 semi-structured interviews and analysed relevant documentation. Larrinaga-González et al. (2001) found that Gray et al.'s (1995) model is a useful tool for explanation the relationship between environmental disturbance and organisational change. According to the authors, more progressive organisations use actively disclosure of environmental information to form the boundaries of the environmental issues and the perception of corporate environmental practice by society. Larrinaga-González et al. (2001) suggest that this approach will not significantly change organisations' activities. The authors explain that secrecy is attributable to financial and environmental accounting in Spain. As per the authors, the resistance to transparency is a serious barrier for environmental accounting. Moreover, Larrinaga-González et al. (2001) claim that those companies where new discourses of transparency evolve are actually trying to control and negotiate environmental issues. The authors conclude that the evidence they found is in line with the evidence found by Gray et al. (1995) that "any form of environmental accounting involves trade-off between transparency and control of the environmental agenda" (Larrinaga-González et al., 2001, p. 236) and Spanish companies are not truly changing their traditional perceptions of the environment. Therefore, the authors suggest that environmental reporting practice should be critically examined.

O'Donovan (2002) employs legitimacy theory to explore the types of strategies and types of disclosures Australian companies use to gain or maintain legitimacy. The author employed interview approach to investigate managers' disclosure choices, the reasons behind those choices, as well as manager's attitudes towards particular events.

Interviews consisted of two stages: first consisted of closed questions, which then were quantitatively analysed, and second part consisted of open questions, which was analysed using qualitative techniques. The interviewees were given different scenarios and asked what disclosure strategy they would use in those particular scenarios. The author found support of legitimacy theory as a theory explaining the disclosure decisions of environmental information. The author draws the matrix, which outlines the likeliness of adoption of particular strategies based on perceived significance of an environmental event. O'Donovan (2002) found that the reason behind those environmental disclosures is a positive image of the company. The author questions that usefulness of voluntary environmental disclosures if these disclosures are produced for public image.

Solomon and Lewis (2002) question why some companies voluntarily disclose environmental information while others fail to do so. The authors suggest that possible incentives to disclose environmental information could be markets (through free market perspective), social (stakeholder, legitimacy and political economy perspectives), political (political pressure) and accountability. As per the authors, the market, social and political incentives are the results of the notion of accountability of the company to disclose environmental information to the financial community, stakeholders and society. Solomon and Lewis (2002) base the suggestions about possible disincentives on the literature, in particular on Gray et al. (1993), which are absence of the demand of this type of information, no legal requirements, too costly, and firms had never considered the provision of this information. To test those suggestions the authors conducted survey of users and prepares of environmental disclosures. The authors received a high response rate of 43%, which comprised of 267 usable questionnaires. The authors found that the attitudes of the normative group of users, which consisted of academics, environmental consultants, government organisations, to the incentives for environmental reporting were marketing and public relations rather than accountability. The incentive of improvement of the company's corporate image was also noted by the interested group of users (environmental NGOs, financial advisors, banks, institutional investors, etc.). As disincentives, the normative and interested groups mention the reluctance to report sensitive information, which companies do not have to report, as there is no regulation. The authors found that this was also consistent with the views of prepares. In fact, the authors compared the views of all groups and concluded that groups agreed on that the incentives for environmental disclosures was "to comply with

regulations, as an acceptance of a change in society's ethics and to meet the demand for environmental information" (Solomon and Lewis, 2002, p. 164). However, the authors found that preparers (companies) view their own motives for environmental disclosures more favourably than do the users.

As per Solomon and Solomon (2006), the studies that explain why companies disclose social, ethical and environmental (SEE) disclosures suggest that companies report this information because of "peer pressure, pressure from lobby groups, government involvement, need to legitimise the company's activities and retain a license to operate, reputation enhancement, corporate identity and marketing, a change in society's ethical profile, and a growing demand from the investment community" (Solomon and Solomon, 2006, p. 566). The study explored to which extent SEE disclosures are integrated in institutional investment decisions. The authors conducted 21 face-to-face interviews with members of the institutional investment community. The authors found that mainstream financial community is becoming increasingly interested in SEE disclosures. This, as per the authors, is acting as catalyst for companies to improve the quality and quantity of disclosures in those areas. The authors found that investors consider disclosed SEE information inadequate because of it incomparability, suggesting that standardisation through the guidance would be useful. Furthermore, Solomon and Solomon (2006) found that mainstream institutional investors integrated private SEE disclosures into investment process because SEE information is considered as adding value and SEE risks are considered material. The authors also found that companies were asking their main shareholders what SEE information they wanted to see to inform their public disclosures. The authors suggest that this was a result of uncertainty associated with voluntary reporting. The study also find that larger institutions have more resources and as a result more ability to initiate SEE engagement with companies, while smaller investors demonstrate less formal SEE engagement process. The authors also claim that institutions rather than companies influence corporate governance in SEE area.

Spence (2007) study is exploring perceived managers' motivations that underline social and environmental reporting (SER). The author interviewed 25 representatives of large companies in the UK, interpreting empirical data using the discourse theoretical perspective. The author suggests that motivations behind the SER disclosures are more complex than just risk management signals to investors. The author found that for the

majority of the respondents SER was commercial or business oriented, rather than moral socio-environmental oriented. Even if socio-environmental concerns were raised, they were still linked to "business case" (Spence, 2007, p.865). The author notes that as the business case CSR lies within risk and reputation management, stakeholder management, peer pressure, business efficiency, and internal champions were acknowledged. The author found that even if individual manager has possibility to exercise some ethical activities on the local level, they are limited in activities at macro level, where business case is exercised.

Bebbington et al. (2008) paper explores the possibility of reputational risk management (RRM) being the motive for CSR reporting. They adopt a three-stage approach: examine RPM thesis, exploratory study of a single report, based on that, the study develops understanding of the linkages between legitimacy and stakeholder theory with RRM thesis. In the analysis, the authors distinguish between legitimacy and reputation. Thus, legitimacy suggests "meeting and adhering to the expectations of social system's norms, rules and meanings [reputation relies on] comparison of organisations to determine their relative standing" (Bebbington et al., 2008, p. 344). Reputation, as per the authors, could be strengthened by making facilities of the company visually more attractive, but this would not necessarily lead to legitimacy. Based on the three-stage analysis, the authors suggest that RRM, indeed, plays a role in guiding the narrative of the reports.

Islam and Deegan (2008) also explored social and environmental reporting in Bangladesh, as was done in the study by Belal and Owen (2007), however as a sample the authors chose one major garment organisation – Bangladesh Garments Manufacturer and Exports Association (BGMEA)[7]. The study employed legitimacy, stakeholder[8] and institutional[9] theories to understand and explain reporting behaviour, claiming that all three provide a richer view. The authors conducted interviews with senior executives about their motives to engage in CSR reporting and then analysed the changing practice

[7] BGMEA – "acts as a lobby group to protect the interests of the sector and as a promoter of trade negotiations in international markets" (Islam and Deegan, 2008, p.852).

[8] Stakeholder Theory is often employed to explain why companies produce social and environmental information (Islam and Deegan, 2008, p.855). According to the authors, "the more critical the stakeholder's resources are to the continued viability and success of the organisation, the greater the expectation that stakeholder demands will be addressed" (Islam and Deegan, 2008, p.855).

[9] "Institutional Theory tends to be used to explain existing organisational structures and has been used to show that particular operating or reporting policies and structures might be employed because of pressures from stakeholders who expect to see particular (and somewhat homogeneous) practice in place" (Islam and Deegan, 2008, p.856).

of social and environmental reporting using content analysis. The authors found that manufacturers respond to social issues in a reactive way, only when non-responding to expectations would lead to the cancellations of contracts with multinational buying companies. Islam and Deegan (2008) found that the major motivation for social performance and reporting was the concerns of multinational companies – responses of manufacturers are driven by economic rather than ethical or moral motives. Respondents claim that CSR practices of the garment manufacturer are affected not only by multinational companies but also by a broad international community – western consumers, UNICEF[10], US Governments, NGOs and the media. The authors found changes in CSR disclosure policies of the BGMEA during a 19-year period, which they linked to external pressures exerted on major garment manufacturers. The paper claims that to understand the rational for specific disclosures the researcher needs to explore the social and environmental expectations being exerted on the industry in a developing country. The authors suggest that all three theories can be applied to explain social disclosures. Thus, in accordance with stakeholder theory BGMEA noted that their disclosure policies reacted to the expectations of multinational buying corporations. In support of the legitimacy theory, the authors found that BGMEA felt that global community expectations influenced the operations of clothing industry in Bangladesh. From institutional perspective, the authors found that BGMEA accept those operating policies that are similar with those used by their powerful stakeholder.

Studies analysed in this section suggest that companies report on CSR to form the boundaries of the environmental issues and the perception of corporate environmental practice by society (Larrinaga-González et al., 2001). In fact, Solomon and Solomon (2006) found that investors are interested in social, environmental and ethical information disclosures. On the other hand, companies are reluctant to disclose sensitive information publicly (Solomon and Lewis, 2002; Larrinaga-González et al., 2001). Companies engaging in CSR are concerned with economic rather than social or environmental issues, as was found by Spence (2007) and Islam and Deegan (2008). In fact, when disclosing reputation risk management (Bebbington et al., 2008) and positive image (O'Donovan, 2002; Solomon and Lewis, 2002) play a significant role.

[10] UNICEF – United Nations International Children's Emergency Fund.

2.5 Literature on environmental disclosure practice in the Russian context

According to Belal and Lubinin (2009), there are not many studies that are looking at the social and environmental disclosures in developing countries. One of the studies that fulfil the gap is the study by Belal and Lubinin (2009) which explores the extent of CSR among Russian companies. The authors explored social and environmental disclosures in annual reports of 20 firms using content analysis. In relation to environmental issues, the authors claim that industrial pollution, in particular air pollution from heavy industries, is one of the biggest concerns in Russia. The authors found that most of the companies (90%) in the sample disclose some sort of social and environmental information. As environmental disclosures, the authors considered disclosures related to environmental protection and health and safety. The study reveals that 85% of companies disclose environmental protection information and only 40% disclose health and safety information. The authors noted that many of the Russian companies made extensive disclosures. It is worth mentioning that the study analysed annual reports published in 2004. Taking into account the developments in CSR and increasing trend in CSR across the globe, which according to the authors is confirmed by the study conducted by KPMG (2005), it might be suggested that more disclosures might be found in annual reports and in other sources. The authors also call for further research to examine perceptions of Russian managers and stakeholders towards CSR in Russia. The authors continue stating that despite the fact that environmental reporting is not compulsory in Russia there are companies that disclose this information. Therefore, the authors suggest that firms employ proactive strategy to avoid future regulations concerning the environment. The authors question the credibility of disclosed information as this information neither was verified by external parties, nor any negative disclosures were made and the authors conclude that the quality of the CSR practice was poor.

The study by Preuss and Barkemeyer (2011) explore whether companies in developing economies determine for themselves the main aspects, which they address in their sustainability reports or whether they address issues that are addressed by companies in developed countries. The study was mainly focused on Russian companies and compared GRI G3 sustainability reports across developing countries (Brazil, China, India, Russia, South Africa and South Korea) and developed countries (Australia, Canada, the UK and the US). The study focuses on mining and metals, oil and gas, and

utilities sectors, which are considered as highly polluting sectors. The authors found that companies in developing countries engage with Western models of CSR and they are very enthusiastic about adoption of the GRI guidelines. At the same time, the authors found that firms in developing countries outperform their counterparts form developed countries in relation to the coverage of GRI indicators. The authors suggests that there might be two explanations, either these firms really in a lead of addressing social and environmental issues or they are trying to hide the reality behind GRI reporting framework. The authors call for further investigation of this suggestion. In relation to Russia, the authors found that Russian firms occupied middle position between developed and developing countries in the level of disclosure on GRI indicators. They find that Russian companies disclose less on society performance indicators, such as corruption or anti-competitive behaviour. The authors also call for research, which would cover wider spread of sectors, or would be focused on smaller firms. Preuss and Barkemeyer (2011) also suggest that there is a need for research, which would explore the link between reporting and practice.

Fifka and Pobizhan (2014) looked at CSR in Russia through institutional lens. The authors analysed disclosures made by 50 largest companies in Russia in annual reports and non-financial reports using content analysis. The limitation of the study, which authors indicate is that they analysed if particularly attributes of CSR were disclosed but did not examined the quality of those disclosures. Nevertheless, the authors found that 86% of companies disclose information on their CSR performance. Moreover, 90% of those disclosures are made in Russian and English languages. The authors suggest that through publication of English versions companies engage with their international stakeholders, suggesting that there some international influence on CSR. However, Fifka and Pobizhan (2014) state that "CSR in Russia is shaped by the country's institutions" Fifka and Pobizhan (2014, p. 200). According to them, national political and socio-economic environment affects the CSR practice in Russia. The authors also suggest that as a major stakeholder the companies see the State, as 76% of privately owned companies mention government in their reports. The authors found that 68% of companies engage with environmental protection, while the social issues are considered by 82%. The study was not concerned with specific environmental issues, so it is not possible, for example, to say how many companies were concerned with climate change issue in particular. The authors made an interesting conclusion that companies in Russia continue to play a social role, which was appointed to them by communist regime.

The analysis in this section, demonstrated the limited number of studies exploring CSR reporting practice in Russia. Those few studies, which investigate CSR practice were explored in this section. Belal and Lubinin (2009) suggest that perceptions of Russian managers and stakeholders towards CSR should be explored, while Preuss and Barkemeyer (2011) suggest that the link between reporting and practice should be investigated. It can also be stressed that there are no studies exploring reporting of GHG emission and climate change related issues in Russia, although, Russia is one of the biggest GHG emitters in the world. It is suggested that it is important to analyse GHG emission and climate change reporting practice in Russia, which would allow seeing overall picture among Russian companies. It also important to draw on the Russian context, as was suggested by Fifka and Pobizhan (2014, p. 200), national political and socio-economic environment affects the CSR practice in Russia. However, even this would not allow to understand in-depth the reasons behind the practice, therefore, it is suggested that attitudes of managers and accountants, their perceptions on motivations and barriers on GHG emissions and climate change related disclosures should also be explored.

2.6 Implications

Studies, which explore carbon disclosure practice, attitudes of managers and accountants towards environmental disclosures and their views on motivations for environmental disclosures, focus mainly their analysis on organisations from developed economies. The researcher believes that it is important to understand the practice in developed countries, as the practice in developed countries could be considered as a driver for change or as a model in developing countries. However, it is also argued that it is important to understand the practice in transitional and developing countries. Developing as well as transitional economies are concerned with economic growth and therefore might prioritise economic development over environmental impact. As was discussed earlier, the issue with GHG emissions and global climate change is that it is not a case of where the emissions occur, it is the fact that those emissions were added into global GHG stock in the atmosphere. Therefore, it is particularly important to explore current disclosure practice, as well as attitudes of preparers towards GHG emissions and climate change issues in developing and transitional economies. The experience of preparers is very valuable here too, as it might help to identify possible

incentives to improve the practice, if it needs to be improved, as well as to identify barriers for those activities.

Moreover, significant role is playing the context of the country, as was discussed in this chapter. The analysis of the literature suggests that the context of the country is likely to influence the accounting practice and disclosure practice, although there are limited number of studies that give much attention to the context where companies operate. Although, some studies (de Aguiar and Bebbington, 2014; Ieng Chu et al., 2013) take into account at least country specific regulations. However, Prado-Lorenzo et al. (2009) found that the commitment of the country to the environmental protection influences firm's decision to disclose climate change related information and as per Wegener et al. (2013) even influence of domestic investors plays a significant role here. Studies, which explore perceptions of accountants and managers towards environmental issues also do not give much attention to socio-economic, historical and political context, which was also acknowledged by Kamla et al. (2012). However, the importance of the context was evident from studies by O'Dwyer (2002) and Belal and Owen (2007). The importance of the context is also emphasised by the institutional theory, which is utilized in this interpretive study.

Studies that analyse GHG emissions disclosures and climate change related disclosures mainly use quantitative content analysis. When conducting quantitative content analysis in this particular study, it was noted that some of the important information related to climate change was missing. Therefore, it is suggested that qualitative content analysis can provide insights, which could potentially be lost when using only quantitative content analysis. It can also be suggested that application of both versions of content analysis can provide with fuller picture of disclosure practice in place.

Moreover, studies on GHG emissions climate change related disclosures mainly focus on a single media, either on CDP reports, annual reports, sustainability reports, or websites. Only studies by de Aguiar and Bebbington (2014), Hrasky (2012), Rankin et al. (2011) analysed two types of media, and Freedman and Jaggi (2005), Pellegrino and Lodhia (2012) used more than two types of media. Although, Pellegrino and Lodhia (2012) was focused on only one industry within one country. It is, however, suggested here that analysis of multiple media is preferable, as companies now have a range of media they can use for corporate disclosures, not only annual reports, as it was in the past. There is a potential risk then to miss some of disclosures. In fact, de Aguiar and

Bebbington (2014) found that companies disclosed more GHG emission information in sustainability reports, then in annual reports. Pellegrino and Lodhia (2012) and Rankin et al. (2011) suggest that usage of multiple media in the analysis can give richer information about companies' reporting.

Furthermore, there are also limited number of studies, which explore the GHG emission and climate change reporting practice and perceptions of those issues in one study. It is not surprising, taking into account that there is actually limited number of studies exploring perceptions related to such specific issue of climate change. It is, however, suggested that analysis of disclosure practice and perception of the issue can provide with useful insights. In fact, Islam and Deegan (2008, p. 850) acknowledge that "the findings show that, within the context of developing country, unless we consider the managers' perceptions about the social and environmental expectations being imposed upon them by powerful stakeholder groups then we will be unable to understand organisational disclosure practices".

This study is addressing these gaps and analyses GHG emission and climate change related disclosure practice in transitional economy, Russia, being informed by a its specific context.

The analysis of literature in this chapter also demonstrates that studies used different theories to explain carbon reporting practice, with the majority of those studies which have largely viewed practices through a constrained lens of legitimacy. However, Kuznetsov and Kuznetsova (2012) suggest Russian managers do not see CSR as a legitimacy tool, if one might expect the notion of seeking legitimacy here to have at least a pervasive aspect. This study does not restrict the theoretical lens to legitimacy but broadens out through contextual appreciation. In this regard, institutional theory is mobilised here, following earlier uses in social and environmental research, e.g. see Islam and Deegan (2008), Kolk et al. (2008), and notably Rankin et al. (2011).

2.7 Chapter Summary

The analysis of the literature in this chapter demonstrated that in recent years there has been published an increasing number of studies exploring the disclosure of GHG emissions and climate change issues. Those studies were presented under common themes. Thus, Sections 2.2 explained first what carbon accounting is. It also outlined the

literature that explored carbon disclosure in practice, managerial incentives for those disclosures, as well as studies on strategies companies employ in reporting their climate change impact. The analysis of carbon disclosure literature demonstrated that companies increased their GHG emission disclosures over time, however, the studies found that the quality of those disclosures remained questionable. The analysis of prior literature also demonstrated the lack of studies focusing on developing or transitional economies. It is argued in this study that understanding of the context where companies operate is important to appreciate the accounting practice in place. However, literature review demonstrated that not many studies explore the influence of the context. This study is addressing those gaps and goes further to explore not only GHG emissions disclosures but also climate change related disclosures.

Chapter two also explores studies on attitudes of accountants and managers towards environmental accounting, auditing and their regulation in section 2.3. As was mentioned, section 2.3 of the chapter focused on broad environmental issues, as there are a limited number of studies exploring perceptions of carbon accounting in particular. Contrary to studies that explored GHG emission disclosures, studies on attitudes of accountants and managers draw attention to developed and developing economies with more studies paying attention to the context where companies operate. Studies found that there is a gap between attitudes of companies' representatives and real actions. Studies suggest that voluntary approach is not sufficient for extensive and higher quality disclosures.

This chapter also analysed literature on perceived motivations for environmental disclosures in section 2.5, which suggests that companies are more concerned with their economic development than with social and environmental issues.

Chapter two also explore scarce number of studies, which investigate CSR practice among Russian companies. There are no studies that the author is aware of that would investigate GHG and climate change reporting among Russian firms.

This chapter identifies the implications of prior studies in section 2.6, which are addressed in this particular study, which is concerned with GHG emission and climate change reporting practice of Russian companies.

Chapter 3: Approaches to Theory, Methodology and Methods

3.1 Introduction

Chapter 2 reviewed the literature, which illustrated a variety of methods and theoretical perspectives employed. This chapter provides an outline of theory, the research methodology and methods underpinning the analysis of this research project. When scientists embrace the researched question(s) they approach it based on their understanding the world and how it can be explored. Thus, according to Burrell and Morgan (1979, p. 1) "all social scientists approach their subject via explicit or implicit assumptions about the nature of the social world and the way in which it may be investigated". Hopper and Powell (1985) call management sciences' researchers to consider their own beliefs and values related the nature of society and the social sciences. Therefore, Laughlin (1995) argues that deliberate choices on philosophical assumptions of the researcher should be addressed prior to undertaking any study. Following this call, this chapter outlines the philosophical assumptions underpinning this empirical study within Laughlin's (1995) paradigm in section 3.2. Section 3.2 also outlines the theory employed in this study. Section 3.3 outlines methodological orientation of this interpretive research study. Section 3.4 discusses methods employed in order to understand the current state and future prospects of GHG emissions and climate change related disclosures as well as the perspectives of managers and accountants towards those disclosures and activities related to reduction of the companies' impact. The methods discussed are context analysis, qualitative and quantitative content analysis and interview approach. Section 3.5 outlines the summary of the chapter.

3.2 Response to Laughlin (1995): A Critical, Subjectivist and Balanced Approach to Theory Development

Various approaches to empirical research have different biases and assumptions. Thus, according to Laughlin (1995), "all empirical research…[is] partial" (Laughlin, 1995, p. 65) but the choice on theoretical and methodological assumptions enables the researcher to be clear about biases in a specific approach. Here, Laughlin's (1995) analysis of research paradigms is utilised as it provides a useful framework to conduct empirical research in accounting. According to Gallhofer et al. (2013), Laughlin (1995)'s framework clarifies, especially to novice researchers, theoretical and methodological

issues by considering them in a three dimensional paradigm. The framework developed by Laughlin was based on four paradigms proposed by Burrell and Morgan (1979).

Burrell and Morgan's framework is a two-by-two matrix. Two continuums of their matrix are based on two assumptions: the approaches to the social science and assumptions about the nature of the society. Approaches to the social science, on the continuum, range from subjective to objective, while different assumptions about the nature of the society range from the sociology of regulation to the sociology of change. Burrell and Morgan (1979) draw four paradigms based on these two assumptions, which are functionalist, interpretive, radical humanist and a radical structuralist. These four paradigms helped to classify accounting theories.

For Laughlin, Burrell and Morgan's (1979) framework was a useful starting point. However, Burrell and Morgan's (1979) framework had some problems for which it was criticised by such authors as Chua (1986), Laughlin (1995), and Deetz (1996). Deetz (1996) believed that Burrell and Morgan's (1979) dimensions of contrast obscured important differences in contemporary research focus, instead leading to poorly formed conflicts and discussions. Laughlin (1995) saw their framework as too simplistic, which isolated many key domains for choice. Instead, Laughlin (1995) offered an alternative approach for empirical research classification. He proposed a three-dimensional matrix on the choice process for empirical research. His three-dimensional plane is reproduced in Figure 1.

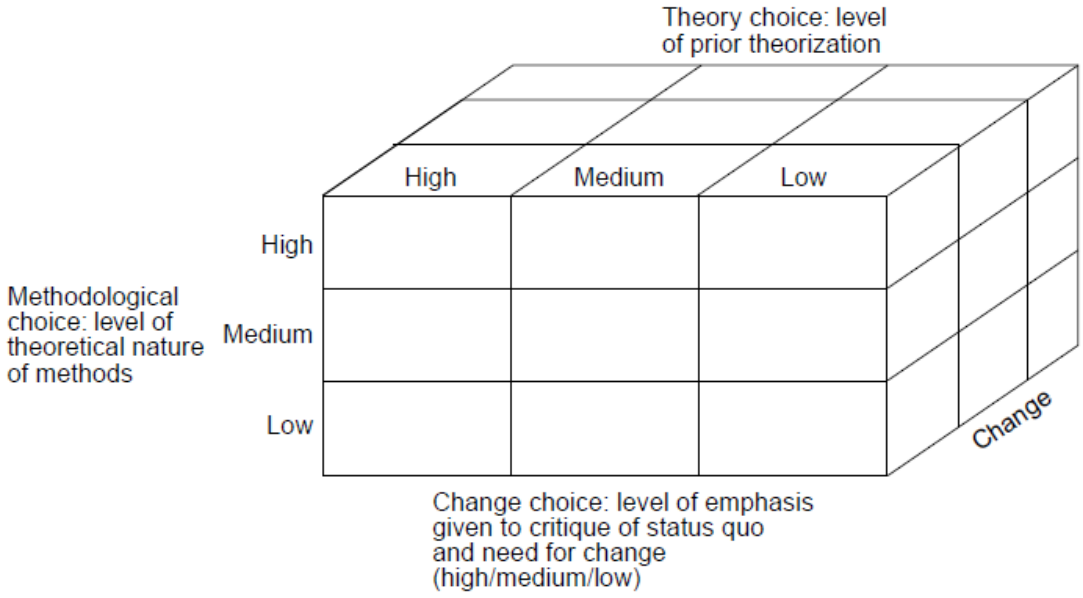

Figure 1. Dimensions on the choice process for empirical research (Laughlin, 1995, p.68)

Laughlin's matrix consists of three choice dimensions: "theory", "methodology" and "change", choices the researcher has to make when undertaking an empirical investigation. Laughlin's (1995) framework locates research paradigms according to their "high", "medium" or "low" emphasis on these three dimensions.

At the first dimension is the level of prior theorization. According to Laughlin (1995), the "theory" choice requires the researcher to decide on the nature of the reality and the ways of obtaining the knowledge about the reality. In philosophy, it is ontology that is concerned with the nature of the reality or the nature of the world, while the ways of obtaining the knowledge about the world is referred as epistemology. Ontological and epistemological issues are connected, if somebody claims about the nature of existence or of reality, than this generally leads to the issue of how this might be known (Hughes, 1980, p. 6). According to Hughes (1980), if somebody makes a claim about the nature of phenomena than they would need to justify that claim by indicating the way in which these phenomena may be known. Thus, according to Blaikie (2007), epistemology is "a theory of knowledge, 'a theory or science of the method or grounds of knowledge'" (Blaikie, 2007, p. 18). It is epistemological assumptions that help to decide what can be considered as acceptable truth by outlining the criteria and process of determining truth claims (Chua, 1986).

Laughlin (1995) explains that theory involves the decision on ontological and epistemological assumptions. The author sees the "theory" dimension as a continuum ranging from low level to high level of prior theorizing. Thus, high level of prior theorizing considers the world as objective and material, and human behaviour is considered as predetermined. Here, the world has high levels of generality and order; the knowledge can be gained through observations, so the scientific methods are applicable. On the other hand, low level of theorizing considers the reality as not material, but rather the reality is grounded in subjective experiences. The reality in this world "is a projection of our minds" (Laughlin, 1995, p. 66), so generality is not possible, but is gained through interpretations. Thus, in relation to the "theory" continuum, the research can be classified based on a degree of ontological and epistemological subjectivism or objectivism (Gallhofer et al., 2013, p. 193).

At the second dimension is the level of theoretical nature of empirical investigation methods - the "methodology" dimension (Laughlin, 1995). This dimension considers the role of researcher in the research process, which is how the research is conducted.

According to Chua (1996), methodological assumptions indicate which research methods are appropriate for data collection. At the one extreme, investigation defined by some theoretical model, where the researcher is not relevant to the research process and it is assumed that subjectivity does not exist. At the opposite "low" extreme, the investigation depends on perceptions of the researcher, where the researcher is not bounded by prior theoretical rules and is allowed to be an active participant of the research process. Chua (1986) elaborates on the assumptions about the essence of the phenomena under study and notes that, for those researchers who assume that physical and social reality exists in an objective dimension, people may be considered as physical objects so are studied as natural scientific objects, for example, through statistical techniques. Thus, this approach would lie on the "high" extreme of the "methodology" dimension in Laughlin's (1995) matrix. On the other hand, this belief in an "objective" world can be criticised (Chua, 1986). The author explains that "[p]eople,.. cannot be treated as natural scientific objects because they are self-interpretive beings who create the structures around them" (Chua, 1986, p. 604). Therefore, this suggests rather a "subjective" world, which should be explored through involvement in the discovery process, for example, through participant observation and in-depth interviews.

At the third dimension is the level of emphasis on "levels of critique of the status quo and the need for change" (Laughlin, 1995, p. 68). Thus, the "change" dimension relates to the perceptions of the researcher of the need for change. At the "low" level of the "change" continuum would be a more conservative approach, which would tend to maintain the situation that is investigated. On the other extreme, at the "high" level of the "change", would be researchers who think that everything they investigate is inadequate and would call for a radical change. On the other hand, "those in the "middle" of this continuum are more strategic in their attitude to change" (Laughlin, 1995, p. 68). Researchers in the "middle" do not criticise everything they observe, instead they are open to maintain certain explored practices although they are still open to challenge the status quo where they think something is inappropriate or incomplete.

Lowe (2004) criticises the Laughlin's (1995) matrix, stressing that he is doubtful of the categorisations produced by the framework. However, Gallhofer et al. (2013) argue that Lowe (2004) expects too much of the framework. Gallhofer et al. (2013) suggests that the framework is not claiming something as being precise, explaining that schema that

involves continuum raise as many questions as provides answers. The crucial issue in Laughlin's (1995) classification schema is to "get people to think intelligently and philosophically about issues in research" (Gallhofer et al., 2013, p. 194). Gallhofer et al. (2013) further acknowledge that classification schemas are bound to be simplified, as their objective is to enhance awareness and understanding. Therefore, Laughlin's schema should not be viewed as a precise mathematical formulation (Gallhofer et al., 2013). Furthermore, according to Parker and Roffey (1997), Laughlin's (1995) framework provides an opportunity to compare theoretical and methodological implications of economic theorists, behaviourists, as well as implications of grounded theories, which fit into neither camp.

Laughlin (1995) notes that there is no comprehensive approach to explore the world, he emphasises that the researcher has to justify a particular position on the three continuums in order to defend the worthiness of their position. The author calls in his study for the "middle-range" thinking, which is taking middle position on each three continuums. Although, Gallhofer et al. (2013) suggest that "balanced" thinking would be more appropriate term for the positioning of the researcher. According to Gallhofer et al. (2013) this "balanced" thinking "is consistent with the openness and non-dogmatic strengths of the critical theoretical position Laughlin seeks to promote" (Gallhofer et al., 2013, p. 197). Moreover, Gallhofer et al. (2013) suggest that Laughlin (1995) reference to the "far extreme" should rather be expressed, for example, as "towards the subjectivist extreme of the band or continuum" (Gallhofer et al., 2013, p. 198). According to the authors, the reason is that "extreme" points mean the end points, which is problematic in the continuum.

This research study employs Laughlin's (1995) framework to approach the empirical research and in particular adopts the "balanced" approach in relation to each dimension of the framework. The following sections explain the positioning of this study in Laughlin (1995) three-dimensional plane.

3.2.1 Ontological and Epistemological Assumptions

The main objective of this study is to explore current state and future prospects of carbon accounting in Russia. To understand the current state of carbon accounting and carbon related disclosures this study analysis carbon disclosure practice among Russian companies in different media. For further understanding of the current situation and

future opportunities, the study explores the attitudes of accountants and managers towards GHG emissions and climate change related issues, as well as their views on companies' motivations for climate change related (non-) activities and their (non-)disclosure.

The philosophical beliefs of the researcher are presented based on the purpose of this research. The researcher beliefs in more subjective world, although "recognises a material reality distinct from our interpretations" (Laughlin, 1995, p. 81). This research assumes that reality does not exist independently of human beings. People not only interpret their own actions but also actions of those with whom they interact and through this interaction meanings become objectively real (Chua, 1986, p.613). It is assumed that the "objective reality" is constructed through social interactions, for example, through language, whether it is written or oral, or actions.

The subjectivist epistemology suggests that generalization is not possible rather "the social world can be understood only by first acquiring knowledge of the subject under investigation" (Hopper and Powell, 1985, p. 431). A more subjectivist epistemology translates into a concern to be open to the experiences and insights of others, in this research particularly it is important to be open to the experiences and understanding of climate change related issues by managers and accountants. The subjectivist epistemology would help to interpret accountants' and managers' positions as well as their interpretations of climate change related issues and actions taken by other actors, like regulators, competitors, society, media. Thus, developing the knowledge is partly about listening to others and trying to understand how they see the world, in case of this study, how accountants and managers see the reality.

3.2.1 'Critical' Nature of the Study

As was discussed in previous chapters, one of the major environmental problems in the world is global warming, which is highly likely to be a result of excessive emission of carbon dioxide, as well as other GHG. This study is interested in changing the world in sense of constructing more environmentally friendly world. Russia being one of the biggest GHG emitters in the world plays an important role in this context. This is a main reason why Russian context was chosen for investigation of carbon emission disclosure practices.

It is also important to think not only about our present but also about the future, in particular what our generation will leave to future generations? As was discussed earlier the reason of global climate change is increased concentration of GHGs, which is a result of usage of fossil fuels. Before industrialisation planet's society derived energy from renewable sources, such as water, wind and the sun (see Bebbington and Larrinaga-González, 2008). The industrialization led to a high quality of life that people never had before, however, at the high cost. According to Monbiot (2006) the problem is that industrialisation means that our generation is the most fortunate, compared to previous and future generations (see Bebbington and Larrinaga-González, 2008), because high concentrations of GHGs will trigger dramatic ecological, social and economic impacts. The objective to make the world environmentally better place leads the researcher to consider the views of others, in particular the views of accountants and managers, as it is suggested that these constituencies have opportunities to make various business related decisions. The appreciation of their perceptions, can be argued, is the first step towards the change, as understanding of their views, as well as their actions in a particular context would help to understand whether and what changes are necessary. This suggests a "balanced" positioning of the researcher on the "change" continuum in Laughlin's (1995) matrix. The researcher does not believe that everything is ideal and nothing should be changed, nor does she believe that everything is in need of change. On the other hand, the "balanced" position suggests that the investigated situation might continue to hold the status quo but if in need, the situation can be challenged. Laughlin (1995) notes that in this position there is a need for "more sophisticated model of change to make judgement" (Laughlin, 1995, p.84).

However, it can be suggested that judgement cannot be made in isolation based only on the empirical results but rather empirical results should be interpreted in the global, social and historical context. Thus, in order to make it possible to critically assess and offer ways forward the researcher is exploring the Russian context in relation to environmental, and in particular to carbon emission related issues.

3.2.2 Non-Dogmatic Thematization

As stated above, this study is interpretive and subjective in nature. Further, the study is not committed to a high level of prior theorizing in Laughlin's (1995) terms – it is more of an open, non-dogmatic approach.

More objectivist researchers place less stress on interpreting the interpretations of social actors in the world. Instead, they place more stress on the determination of social actions by the context as seen through an objectivist lens, as they believe that the reality can be known through the testing a theory through reference to objective facts. Such researchers tend to construct quite a "close" theory in advance of the research, which might be quite dogmatic. Here, the researcher refers to "dogmatic" theory as to the theoretically defined approach, which assumes that the answers are already known and just need to be tested. According to Gallhofer et al. (2013, p.194) dogma "restricts communication, creates false antagonism and restricts (rather than liberates) forms of enquiry". The approach tends to displace explicit critique in attempt not to allow exercise of judgement beyond of the one that is being tested. In fact, the literature review demonstrated that many studies that explain carbon reporting practice tend to employ legitimacy theory and to a lesser extent, stakeholder theory (Deegan, 2002, p. 288), which are then tested. The problem with this approach is that researchers look for particular answers that would support or reject their hypotheses, but this approach does not allow suggesting other interpretations and is rather bound within a particularly chosen theory.

On the contrary, by allowing the theory and questions to in some respects/ways to emerge from the research process the researchers hope that they will be more respectful to the views of subjects (Hopper and Powell, 1985, p. 447). Deetz (1996) explains that in interpretive studies theory might provide important understanding and conception, however theory is not a tool to classify those concepts neither is a tool to test theory. With loose thematization the researchers expect that conceptions and understanding would be derived from subjects or other data. Deetz (1996, p. 202) explains that "[t]he…goal of interpretive studies is to show how particular realities are socially produced and maintained through norms, rites, rituals, and daily activities".

The researcher in this study here adopts 'balanced' positioning, although towards more subjective epistemology, which suggests that the reality is constructed by social actors. It is believed that people should not be considered as objects, but rather as active sense makers, as explained by Deetz (1996). Although "balanced" positioning recognises that generalizations about the reality might be possible, this still will not be a full picture about the world. Generalizations would provide rather "skeletal" picture of the reality and would require empirical detail to make it meaningful (Laughlin, 1995). On the

contrary, “low” level of prior theorization suggests that each system exists separately in every situation and because of the differences and specificities of each particular situation, ultimately no general learning is possible (Laughlin, 1995). The researcher rather adopts “balanced” approach in Laughlin’s (1995) paradigm, as it provides “skeletal” picture of reality through generalization, as well as allows drawing from empirical details to make the picture meaningful.

This “balanced” positioning, allows the researcher to be non-dogmatic in prior theorization. Although the researcher identifies questions, which are explored in the study (discussed in Chapter 1), those questions are not too constraining, and the researcher is open to new questions, which might emerge in the process of the study. The study is interpretive in nature, which is in line with concepts of institutional theory that is discussed below.

3.2.4 Approach to Institutional Theory and accounting research

According to Dillard et al. (2004), institutional theory is becoming the main theoretical perspective in organization theory and is increasingly used to study organizational accounting practice. This extensive usage of institutional framing reflects its usefulness for articulating insights into organizational complexities and specificities in institutional and socio-political contexts. Institutional theory was utilized in accounting studies to explore different research questions, including social and environmental issues, for example by: Islam and Deegan (2008), Kolk et al. (2008), and notably Rankin et al. (2011).

Institutional theory sees an organisation as a part of a social system. Dillard et al. (2004, p. 509) explains that “[t]he development of formal organization structure is influenced by the interorganizational context (organization field) in which organizations are institutionally embedded”. For Scott and Meyer (1983), institutional environment is characterised by development of rules to be followed by individual organizations if they want to have support and legitimacy (see Dillard et al., 2004). Furthermore, organisations themselves are also seen as having impact upon the system (Islam and Deegan, 2008). For Meyer (2008), institutional theory emphasises modern organisations’ dependence on their environments and sociological institutional theory captures the whole rapid post-World War change. He suggests that compared with other social theories, institutional theory is able to better reflect rapid social transformations,

for instance, “the explosion of human rights…of environmental doctrines and policies, of all sorts of social rationalization (e.g., a global standards movement)” (Meyer, 2008, p. 805). Taking into account changes occurring in Russia since the USSR’s collapse, which have been no less rapid, it is suggested that it is useful to analyse practices through the institutional lens. Indeed, Puffer and McCarthy (2011) believe that institutional theory has a broad applicability in developing markets such as Russia.

Institutional theory “concerns the development of taken for granted assumptions beliefs and values underlying organizational characteristics and practices” (Dillard et al., 2004, p. 507). Consistent with this statement, in this research project an institutional framing helps to understand organizational accounting practice. It is argued that institutional theory provides useful insights into whether and how carbon accounting practice is being institutionalised in Russia as elaborated below. As per Maignan and Ralston (2002), the tendency towards socially responsible corporate behaviour varies between countries and institutional theory is useful in explaining why this is the case, as it recognises that there is a need for institutions other than just the market to ensure that companies are responsible towards society and the environment (see Campbell, 2007).

On institutional theory, Dillard et al. (2004) note that a few studies suggest the importance of the influence of social culture and environment on accounting practices and their usage as rationalizations to maintain legitimacy. This indicates the relationship between institutional theory and appreciation of the quite pervasive influence of a notion of legitimacy. Indeed, as per Deephouse and Suchman (2008), legitimacy is a central concept in organisational isomorphism. For DiMaggio and Powell (1983), key in the history of institutional theory, argue that organizations seeking to be viewed as legitimate tend to adopt similar structures and practices (see Deegan and Unerman, 2011). This process DiMaggio and Powell call isomorphism, leading to homogenization of organizations. For Kolk et al. (2008), carbon disclosure is an institutionalised practice, bound up in the kind of process envisaged by DiMaggio and Powell that even emerging economies start to adopt. Following Dillard et al.’s (2004) suggestion as to the importance of the assumptions, beliefs and values that underlie organizational practices, the study here employs an interpretive analysis of the quality and factors influencing disclosure practice, attitudes of different constituencies towards GHG emissions and climate change related disclosures, as well as motivations for activities related to climate change and motivations for (non-)disclosures of this information publicly. The

analysis reflects appreciation of the historical, social and political context of the country in which the companies operate.

Indeed, institutional theory highlights the importance of appreciation of institutional context. Per many institutional theorists, structured organisational behaviours are the result of ideas, values, and beliefs that stem from the institutional context (Greenwood and Hinings, 1996). Kamla et al. (2012) and Puffer and McCarthy (2011) similarly encourage context-specific research. Kamla et al. (2012) suggest strategies for change and intervention vis-à-vis social accounting should reflect contextual differences and specificities. Context-specific dimensions are here likely to influence understanding of environmental accounting developments (or the lack thereof), whilst also global insights can be gained through study of the local as well as global. Furthermore, the local should be appreciated in the context of praxis. This is supported by Puffer and McCarthy (2011), who suggest analysis of business and management in Russia must include appreciation of the environment in which companies operate. The authors emphasise that it is important to take into account the interaction of culture and institutions when countries like Russia analysed rather than focusing only on separate factors.

In fact, the study by Fifka and Pobizhan (2014), which was outlined in Chapter two, utilized institutional theory in order to investigate CSR disclosures in Russia. The authors used content analysis of annual reports and sustainability reports of 50 Russian firms and concluded that CSR in Russia is shaped by the country's institutions, in particular, by political and socio-economic environment. This particular study analyses Russian context, paying attention to political and socio-economic environment as well as to historical background and international interactions.

However, some authors (Townley, 2002; Zilber, 2002) suggest that pressures for change coming from the organizational context do not automatically lead to a breakdown in institutional norms (see Dacin et al., 2002), instead those pressures are interpreted, they are given meaning, and then responded by actors within organizations. This suggests that it is not enough to explore only possible factors influencing the practice but it is also important to understand how new practices are interpreted by organizational actors, in particular by managers and accountants, as they are the ones who take part in information disclosure.

It is, therefore, considered in this study that it is important to explore not only context where companies operate but also intra-organizational dynamics. For the analysis of such a complex interaction of the context and the internal dynamics (interpretation of a new practice, allocation of the meaning for the company, and choice of a response) the framework proposed by Greenwood and Hinings (1996) is considered very useful. The framework is outlined in section 3.2.5. The neo-institutional perspective allows exploring differences and change in practice, not just focusing on the explanation of the similarity (isomorphism) and stability as can be found in early institutional studies (Bouten and Everaert, 2015). This study particularly is interested in why some companies adopt new practice, while others not, what are the reasons behind the adoption of those new practices as well as barriers for adoption of those practices.

As was discussed earlier in this chapter, this study employs Laughlin's (1995) position, which suggests that a theoretical framing can be a balance between being theory driven and empirics driven, between pursuing a tightly defined theory and pursuing a loosely defined theory and between being outright critical and outright conservative in orientation. Following Laughlin, the approach employed here is a balance going beyond the rejected extreme tendencies of Laughlin's continua. It is believed that an institutional framing, applied here, is well balanced in this respect: it is an interpretive approach seeking to engage with and be open to rich empirics; it is interested in critical understanding and developing insights for ways forward.

However, the framework employed in this study does not suggests a dogmatic approach. The researcher believes that it is important to be open to rich empirics. In fact, the neo-institutional framework is found to be very helpful in framing the analysis while being committed to openness and a concern to find things out through empirical engagement.

3.2.5 Neo-Institutional Theory

As discussed above, my research approach is consistent with what Laughlin (1995) articulates as middle range theory. One dimension of this is to embrace a relative openness in respect of prior theorisation. That is, a relatively open approach to theoretical development is taken that is concerned to inform theory development via substantive empirical analysis. The relatively open theoretical stance is informed by a concern to analyse the contextual and institutional setting and a framing that adopts the

tenets of neo-institutional theory is found to be very helpful in framing the analysis while being committed to openness and a concern to find things out through empirical engagement. My approach is located in a paradigm that, in terms of those approaches categorising research approaches along two dimensions by philosophical assumptions (e.g. Burrell and Morgan, 1979; Hopper and Powell, 1985; Chua, 1986), is interpretivist.

Institutional theory suggests that "behaviour is substantially shaped by taken-for-granted institutional prescriptions', which raises the question of 'how can actors envision and enact changes to the contexts in which they are embedded?" (Greenwood and Suddaby, 2006, p. 27). Neo-institutional theory tries to provide an explanation to that paradox. The framework used in this study, proposed by Greenwood and Hinings (1996), attempts to solve that paradox by connecting insights from old and new institutionalism. New institutionalism allows explaining the normative contextual pressures that constrain organizational change while the old institutionalism helps to explain intra-organizational dynamics that produce the change. However, this approach was criticised by Seo and Creed (2002) who argued that this framework only partially solves the issue. This critique, however, can be raised to any framework or model because any empirical research reflects only partial picture as was noted by Laughlin (1995).

The Greenwood and Hinings' 1996 framework (see Figure 2) considers institutional and market contexts as pressures influencing organisations. Per DiMaggio and Powell (1991) organisations adapt to contextual expectations of appropriate organisational forms to gain legitimacy and increase their survival probability (see Greenwood and Hinings, 1996). Institutional theory allows demonstrating that organisations respond not only to market pressures but also to institutional pressures, such as pressures from regulatory agencies, general social expectations and the actions of leading companies. Moreover, these institutional systems are associated with different 'institutional logics'. Greenwood et al. (2011) explain that institutional logics provide guidelines on how to interpret and behave in social situations.

As per Greenwood and Hinings (1996) mimetic, normative and coercive processes are part of the institutional context, but the strength of those pressures are different and the degree of embeddedness of organizations is different. The authors suggest that radical

change is problematic because of the normative embeddedness of an organization within its institutional context.

When analysing the change it is important to understand the structure of institutional context. Greenwood and Hinings (1996) understand the structure of institutional context as the extent of tight coupling and the extent of sectoral permeability. The authors explain that sectors are considered to have clear legitimate organizational templates, which are transmitted to organizations within a sector. Thus, tight coupling relates to the existence of mechanisms for diffusion and monitoring of conforming to a particular set of expectations. As per Greenwood and Hinings (1996) there are variations in the degree of tight coupling across institutional sectors, which might provide inconsistent cues or signals leading to variations in practice.

Furthermore, the mechanisms of diffusion across institutional fields also vary. Thus, per Greenwood and Hinings (1996) there are clear mechanisms in matured sectors, so normative, coercive, and mimetic pressures are high there. While, in less developed sectors the existence of leading organisations is less clear, so there is no stipulated template for organising, thus less pressure for conformity. The notion of central and peripheral organizations was offered by Eisenstadt (1968) and Shils (1975), which refers to capacity of central actors to establish and sustain an institutional logic which is favourable to their interests (see Greenwood and Suddaby, 2006). The authors explain that network location theory suggests that peripheral organizational actors are more likely to disengage from the prevailing template, because they are less connected to other organizations, less aware of institutional expectations, and they are more disadvantaged by existing practices and prefer the change. On the other hand central organizations are embedded within their institutional context and are heavily exposed to normative pressures (Greenwood and Suddaby, 2006). Based on previous studies the authors propose that an embedded organization is neither motivated to change, nor aware or open to alternative practices.

As was mentioned earlier, organizations experience pressures from institutional and market context, which impose their own logics or signals. As per Friedland and Alford (1991), those multiple institutional logics interrelated but at the same time contradictory (see Greenwood et al. 2011). Greenwood et al. (2011) explains that organizations face institutional complexity whenever they confront conflicting prescriptions or templates from different institutional logics. Lepoutre and Valente (2012) explains further, that

"institutional contradictions emerge when multiple institutional logics with conflicting expectations exist in an institutional field, when the institutional expectations conflict with an actor's interests in efficiency or long-term adaptability to exogenous changes, or when an institutional logic conflicts with an actor's personal value and objectives" (Lepoutre and Valente, 2012, p. 287). Thus, these different and contradictory logics might lead to tensions. Bouten and Everaert (2015) suggests that incompatibility between the prevailing logic, for example, profit maximization logic and an alternative logic, for example, being socially and environmentally responsible, provide a source of tensions, which might lead to dissatisfaction with the extant practice and its reassessment. Greenwood and Suddaby (2006), Seo and Creed (2002) also state that contradictions between different institutional pressures trigger a reassessment of prevailing logic.

As was mentioned, sectoral permeability is also important in the institutional context. Permeability refers to openness and exposure to ideas from other institutional arenas (Greenwood and Hinings, 1996). Greenwood and Suddaby (2006) suggest that new ideas occur at the margins of a field, as organisations are less embedded there, less privileged, and more exposed to institutional contradictions. However, the authors found in their study that the proposition that the change is more likely to happen in periphery is not absolute and in contrast found that central organizations (big five auditing firms) initiated the change. The authors explain the change in central organizations through boundary bridging and boundary misalignment, which counter centripetal influence by exposing organizations to contradictions. Boundary bridging connects organisations to other organizational fields, which exposes them to alternative logics. The central organizations outgrow their regulatory boundaries, so the normative pressure reduces, and the organizations become open to alternative ideas. In their model, Greenwood and Suddaby (2006) suggest that "[c]entral organizations occupying boundary-bridging locations are exposed to institutional inconsistencies, increasing their awareness of alternative possibilities" (Greenwood and Suddaby, 2006, p.42).

Furthermore, Greenwood and Suddaby (2006) refer to Oliver (1991) who suggested that the influence of institutional practices depends on their continual reinforcement. However, the authors explain that the pressure is not always enough as those upon who this pressure is exercised can change their pressure receptivity. Greenwood and Suddaby (2006) explain that boundary misalignment is related to an increase of

resource asymmetry between regulatory agencies and elite organizations, which allows elite organizations to overcome coercive pressures. So the authors propose in their model that "[c]entral organizations occupying boundary-misaligning locations are exposed to contradictions of adaptability and resource asymmetry, increasing their openness to alternative possibilities" (Greenwood and Suddaby, 2006, p. 43).

Lepoutre and Valente (2012) notes that regardless logic contradictions happening at the industry level, the response at organization level differs. Greenwood and Hinings (1996) suggest that the change varies within sectors, despite the same market and institutional pressure, because organisations vary in their intra-organisational dynamics. Greenwood et al. (2011) also emphasise that organisations experience institutional complexity differently and to different degrees. The authors explain that "an organisation's position within the field shapes the form and intensity of complexity that it will experience" (Greenwood et al. 2011, p.319) and such firms' characteristics as its structure, ownership, governance and identity influence their sensitivity to particular logics. Therefore, the authors suggest that the response of different firms would be different. Greenwood and Hinings (1996) also stress that the internal complexity of organisations, or intra-organisational dynamics, should be considered seriously.

Thus, Greenwood and Hinings's 1996 framework differentiates between precipitating and enabling dynamics within intra-organisational dynamics. "Interest dissatisfaction" and "value commitment" are central in precipitating dynamics. As per Seo and Creed (2002), the institutional change grows out from one of the core sources of institutional contradictions, which is a misalignment between the existing social arrangement and the needs and interests of actors who inhibit those arrangements. According to Greenwood and Hinings (1996) a high level of interest dissatisfaction of any group becomes a pressure for change. This might happen, as was mentioned above, if those actors inhabit contradicting logics, and these institutional inconsistencies expose actors to alternative templates, increasing their awareness. In fact Greenwood and Suddaby (2006) suggest that there is a need for three components of embeddedness for institutional change, which are awareness, openness, and motivation. However, dissatisfaction does not provide a direct change. As per Greenwood and Hinings (1996), the dissatisfied group needs an alternative template to recognise their disadvantage position. Here, the authors suggest that the pattern of value commitment within organisation is important. The authors identify four generic patterns to the template in use: status quo (all groups are

committed), indifferent (groups are neither committed nor oppose), competitive (some groups support and some oppose) and reformative (all groups oppose). Authors state that the radical change will only occur when there is competitive or reformative pattern of value commitment. As Greenwood and Hinings (1996) suggest, market and institutional contexts interact with interests and value commitments to create pressure for change.

Furthermore, as per Greenwood and Hinings (1996), radical change will occur with supportive "power dependencies" and appropriate "capacity for change", which are enablers of change. The authors explain that different groups within organisation have different powers, which allows those groups to constitute and recreate organisational structures, as they prefer. Thus, in competitive pattern of commitment change would occur only if those with power would be in favour of that change. The authors state that market and/or institutional pressure can shift those in power in favour of groups that prefer an alternative template to the existing one. However, this would happen only if powerful group recognises the benefits of a new template, is aware of potential alternatives and if there is a competitive or reformative commitment.

However, there is also a need for capacity for change in an organisation. Capacity for change is the ability to manage the process of change from one template (practice) to another. This suggests that organisations need to have sufficient understanding of the objective, the skills and competencies to operate within that new template, and an ability to manage how to get to that new destination. The change will not occur without the capacity for change, or on its own, as it has to be combined with either competitive or reformative pattern of commitment.

One of the recent studies that analysed internal dynamics of the change within organisations was the study by Bouten and Everaert (2015). The authors aimed to explore how a variety of SER practices evolve in the presence of conflicting logics – profit-maximization and sustainability. As the current study, Bouten and Everaert (2015) use multi-method approach, content analysis of annual reports produced by 14 Belgian companies and interviews with representatives from those companies. The authors sought to understand the processes within organizations and motivations of manages to disclose CSR information. In particular, the authors explore how competing institutional logics and internal dynamics influence the selection of alternative form of SER through the neo-institutional framework proposed by Lepoutre and Valente (2012).

The authors found that companies whose insensitivity to prevailing profit-maximizing logic was moving towards immunity were more likely to initiate substantial SER. On the other hand, those companies that had symbolic or material resistance to emerging sustainability logic did not initiate SER.

This study is interested in how shifts in logics or existence of multiple logics – disclosure of GHG information, conducting activities related to reduction of climate change impact and profit-maximization – influence Russian companies. In particular, how the concern of climate change and GHG emission raised at the international level, which is not a priority for the state (discussed in Chapter 4), affected the activities of Russian firms and their disclosure practice.

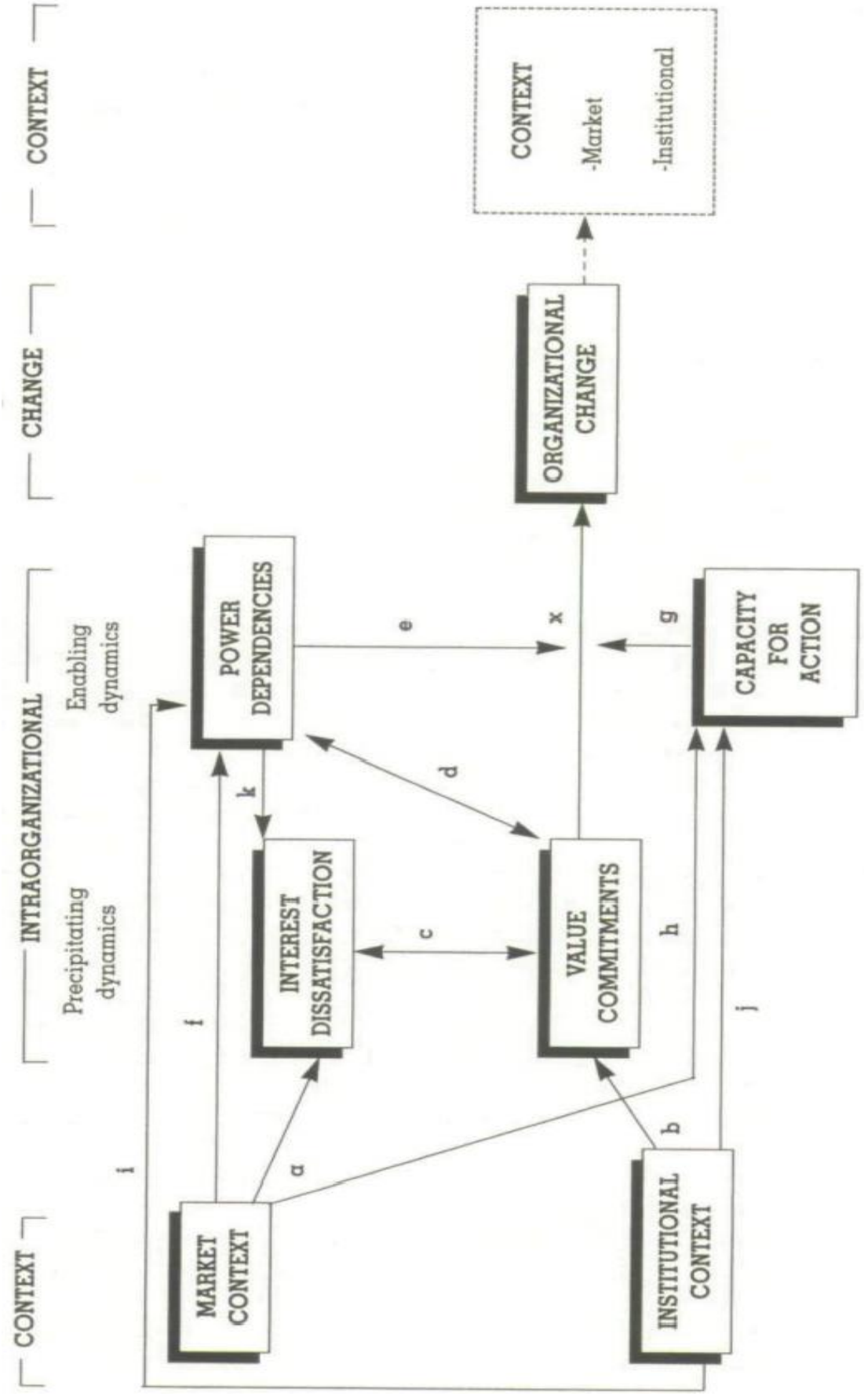

Figure 2. Model for Understanding Organisational Change (Greenwood and Hinings, 1996, p. 1034).

3.3 Methodological Orientation: An Ideographic Approach and the Value of Qualitative Research

According to Burrell and Morgan (1979), philosophical assumptions of the researcher influence methodological implications. Those assumptions suggest "the way in which one attempts to investigate and obtain 'knowledge' about the world" (Burrell and Morgan, 1979, p. 2), or as Chua (1986) explains, methodological assumptions indicate the research methods that can be considered appropriate for data collection. As was discussed earlier, those researchers who believe in more objective world would tent to employ 'natural science' methods, such as relationships and regularities. On the contrary those who believe in more subjective reality would tend to use methods enabling exploring the subjective experiences of individuals, who construct the social world.

Those researchers that consider the reality as socially constructed and hence subjective tend to employ ideographic approach. "The ideographic approach to social science is based on the view that one can only understand the social world by obtaining first-hand knowledge of the subject under investigation" (Burrell and Morgan, 1979, p. 6). According to the authors, this approach stresses the importance of allowing the subject of the research to unfold its nature and characteristics. This suggests that the ideographic approach would tend to use qualitative methods for social inquiry, as they allow in-depth investigation of the social phenomena.

Interpretive studies tend to apply ideographic approach and see the world as an emergent social process, which is created by individuals (Burrell and Morgan, 1979). Interpretivism is concerned with "the meanings and interpretations, the motives and intentions, that people use in their everyday lives and that directs their behaviour" (Blaikie, 2000, p. 115). People constantly interpret and re-interpret their world, attributing meanings to it, for example, to social situations, their own or other peoples' actions. As interpretivism requires an understanding of the social world that people have constructed and which they reproduce through their continuing activities, it is important for interpretivist to discover and describe that world from persons' perspective rather than impose external perspective upon them. However, it is important to understand that those meanings that people attribute to their world are not unique, but "they are intersubjective" (Blaikie, 2000, p. 115). The author explains that people from a particular group or society share common meanings and interpretations, which are

maintained through ongoing interaction. Therefore, the researcher should not focus on specific meanings attributed by a particular person; rather they should look for typical meanings, which are produced by typical actors.

As was discussed in previous section, actors inhabit contradicting logics, and these institutional inconsistencies expose actors to alternative templates, increasing their awareness. Understanding actors' views would allow appreciating why some organizations implemented a new practice, while others did not. Appreciation actors' perceptions would also allow to understand how multiple logics of the institutional context influence the climate change related practice of quite central organizations and how intra-organizational dynamics of those organizations enable that change.

Thus, understanding of accountants' and managers' interpretations about importance of climate change issues, as well as, their views on what is their role in mitigating those issues is important in this research study. Here, it can be suggested it would be important to focus on those constituencies within a particular context, for example, Russian context, because as per Blaikie (2000) a particular society share common meanings and interpretations. Therefore, it is suggested that ideographic approach is the most appropriate to pursue the objective in this interpretive study. The next section outlines the value of qualitative research for social science.

3.3.5 The value of qualitative research

According to Stuart H. Hughes, the period 1890-1930 can be characterised as a time of reconsideration of philosophical assumptions underpinning social inquiries (see Burrell and Morgan, 1979). During this period, some social scientists came to realise that positive position of objective world was problematic for explanation the reality. The scientists realised that natural science methods are not value free. Instead, the scientific observer determines the way in which the knowledge is obtained. It was also realised that a human actor cannot be investigated applying natural science methods, which try to establish general laws through uncritical study of mere facts and which are unable to cope with problems of ultimate truth and validity (Burrell and Morgan, 1979). A key difference is that objects of research in natural sciences are atoms, chemicals, metals, and so on cannot attribute meanings to environment (Bryman and Bell, 2007). On the contrary, as Schutz (1962) explicitly demonstrated that objects of social sciences (people) are capable of attributing meaning to the environment (see Bryman and Bell,

2007). Here, the man can be considered as a free person, who constructs his own reality. Based on these considerations, there was a shift among some researchers on the objective-subjective paradigm, towards the subjectivist extreme of the continuum. This implied the need for different methods than those applied in natural sciences, which were more concerned with people rather than with hard facts.

Qualitative methods are usually undertaken in interpretive philosophical framework. As was discussed above the ontological perspective of interpretive paradigm suggest multiple realities, which are individually interpreted or socially constructed. Qualitative research allows seeing the world through the eyes of the object of the study and interpreting reality from people's perspectives. Thus, according to Arksey and Knight (1999, p. 10) "qualitative approaches concentrate on understanding the thinking and behaviours of individuals and groups in specific situations. This approach directs attention to the differences and particularities in human affairs and prompts the social scientists to discover what people think, what happens and why".

Qualitative methods unlike quantitative methods focus on words and language. Interview is the most often used method in qualitative studies. Qualitative interviews provide insights into what interviewees see as relevant and important. This method also enables to obtain more detailed and rich answers. However, qualitative methods include not only direct interactions with people, but also qualitative interpretations of documents produced by them. One of the most frequently document interpretive methods used in qualitative studies is qualitative content analysis. Unlike the quantitative context analysis that is concerned with frequencies of appearing of a particular category in a document, qualitative content analysis is concerned with underlying themes in those documents. Even, though qualitative methods do not allow generalising research findings they allow in-depth understanding and allow answering "how" and "why" research questions.

The core objective of this study is to present an in-depth contextually rich analysis of the perspectives of representatives of Russian companies towards climate change related issues, as well as the current state and future prospects of GHG emission reporting as well as of the practice related to reduction of climate change related impacts. It is intended to understand in detail motivations for climate change related (non-)activities, reasons for (non-)disclosing this information, as well as how the practice can be changed. In order to understand attitudes and motives behind those activities and

contextual influences the study requires understanding of in-depth knowledge of companies' representatives, such as of managers and accountants. This objective of the study implies that qualitative methods should be used. In particular, it is suggested that semi-structured interviews will be the most appropriate method for in-depth understanding of constituencies' knowledge. It is also believed that qualitative reading of climate change related disclosures would also be fruitful to understand the areas of concern. Qualitative reading of companies' disclosures enables not only to explore reporting practice in relation to a particular theme but it also allows to be open to the themes emerging from the reading of reported information and interpret climate change related issues in a particular social, historical and economic context. It also implies that contextual analysis is important for this interpretive study, as it facilitates understanding the common meanings attributed to climate change issue within Russian society. It is believed that qualitative content analysis would also allow to understand whether GHG emission reporting companies have exposure to other fields (for example, through occupying boundary bridging locations or in other words, to explore their sectoral permeability) and possibly to identify resource asymmetry between regulatory agencies and central organizations (are occupying boundary-misalignment locations).

Unlike the quantitative research that is concerned with testing theory, qualitative research is more open in this sense. Here, as was mentioned earlier, a more 'balanced' approach is adopted. This suggests that the approach adopted is not testing of a predetermined theory, which could be argued is quite dogmatic approach to analyse a researched issue, nether it is a ground theory that draws conclusions from empirical data. Instead, the researcher outlined different themes that emerged through the literature review and the contextual analysis, which then were used as a framework through the data collection and analysis of empirical research. It can be argued that analysis processes is quite iterative, and the balanced approach to the theoretical perspective allowed to be open to the themes that were emerging from the empirical data.

3.3.6 The case for triangulation

As was discussed earlier, subjectivism implies that reality is socially constructed, which is constructed by people in interaction with each other. This implies that experiences of people are shared to some extent (Hopper and Powell, 1985). Although, as discussed above, qualitative methods are useful in understanding how a person sees and

understands the world, results obtained through qualitative approach are not generalizable. According to Reichardt and Cook (1979) qualitative methods are more relevant for studies that look at how language and meanings evolve and are modified, however for establishing the relationships these methods are not so straightforward (see Hopper and Powell, 1985). Nevertheless, in order to answer the research question the researcher is not bounded to particular research methods but they should be logically consistent and appropriate given the objective of the study (Hopper and Powell, 1985). Gallhofer et al. (2013) also criticises Laughlin (1995) for linking positivism and quantitative methods too strongly, stressing that methods should not be strongly determined by the approach to social enquiry. Instead, "they influence preference and evaluations of particular research method" (Gallhofer et al., 2013, p. 197). This suggests that where it is necessary and relevant, the researcher has partial flexibility to apply different methods.

Some studies employ a combination of several strategies to research the same issue. Application of more than one method or source of data in the research is known as "triangulation". In accounting literature, the term 'triangulation' was first used by Campbell and Fiske (1959), which then has been employed within the literature through the application of multiple methods to explain organizational behaviour (see Smith, 2015). According to Blaikie (2000) effectiveness of triangulation is based on the assumption that methods used in the study do not share the same biases and have their own strengths. According to Arksey and Knight (1999) triangulation can have two purposes, which are confirmation or completeness. Berg (1995) argues that combination of different methods enables to obtain a better and more substantial picture of the world (see Blaikie, 2000).

Only few research studies combined different research methods in social and environmental reporting studies. Although, according to Guthrie and Abeysekera (2006) application of the combination of research methods in SER research is fruitful. Moreover, de Aguiar and Bebbington, (2014) suggest that it is wise to spread the focus on different media, not only on annual reports, as they found that companies disclose more information on SER through standalone reports than through annual reports. Among those studies that used combination of different methods in environmental related research, such studies as de Aguiar and Bebbington (2014), Islam and Deegan

(2008), Larrinaga-González et al. (2001), Lovell et al. (2013, 2010) can be noted. The literature review Chapter discussed the methods those studies employed.

For this particular study, triangulation is seen as the most effective approach enabling to obtain a greater completeness. The application of a variety of different methods does not contradict to researcher's philosophical position. As was discussed earlier in this chapter, the balanced positioning on the methodology continuum recognises positive aspects of both positivistic and naturalistic approaches for data collection. Even though the researcher sees some limitations of quantitative methods, but nevertheless, quantitative methods add to her appreciation of what is being explored. Thus, the study applies quantitative and qualitative content analysis in order to investigate the current GHG emissions disclosure practice by Russian companies, as well as interviews of different constituencies, in particular, managers and accountants, in order to understand their perceptions of climate change related issues. However, application of different methods within a study should be exercised carefully, because of the differences in their ontological and epistemological assumptions. Blaikie (2000) emphasis that application of mixed-methods is coherent where "the data they produce…[is]…interpreted within the particular ontological and epistemological assumptions that are adopted" (Blaikie, 2000, p. 274). Discussion of methods employed in this study is covered in the next section.

Thus, following Burrell and Morgan (1979), who stress that research methods are influenced, not determined, by ontological and epistemological positions (see Gallhofer et al., 2013) - I pursue a multi-method approach to research. While my perspective makes me very conscious of the limitations of quantitative analysis it does not mean that I see no value in such analysis. Indeed, here, I find that quantitative analysis helps to provide a big picture of my research focus. The order of my empirical analysis reflects my interpretivist perspective in that the more quantitative part of my analysis informs the more qualitative analysis from which deeper insights are possible. First, there is a contextual analysis; then a quantitative analysis; then a qualitative analysis (a qualitative content analysis followed by a qualitative interviews approach). At each stage, however, there is a reflective approach which tries to build up the theory in neo-intuitional terms by looking backwards at prior analysis in the thesis and forward to its development. Thus, the quantitative analysis reflects on the findings through a lens informed by the contextual and institutional insights of the prior chapter while

indicating how the theorising can be developed further in the subsequent qualitative analyses. The application of multi-methods here reflects the strength also of triangulation as the understanding is enhanced and deepened. The middle range commitment to being critical informs the analysis and its concerns to explore further areas articulated in the final chapter.

3.4 Methods Used in this Study

The main objective of this study is to understand current practice related to climate change and to understand why some Russian organisations changed their reporting practice from disclosure of only financially related information towards inclusion of information related to climate change. Here the views of managers and accountants about GHG emissions, their role in mitigating climate change, their perspectives of how the issue can be handled on organisational level, and their views on whether there are any obstacles for companies' engagement in the issue is important. In order to explore these issues, the study requires in-depth understanding of managers' and accountants' knowledge. This suggests that qualitative methods should be employed. It is considered that in-depth interviews would enable to pursue the objective of this study.

As was discussed above, the researcher adopts more subjectivist epistemology but is placed nearer to the "balanced" position on the Laughlin (1995) paradigm. This implies a more qualitative approach, however, generalizations are not excluded. Thus, for the analysis of current carbon disclosures practice qualitative and quantitative methods are adopted. In this study quantitative paradigm enables to broadly outline the common GHG emission disclosure practice among Russian companies. However, the study concerned not only with describing the common practice, but also with understanding why it is happening, the reasons and motivations behind carbon (non-)disclosures. These questions can be approached through qualitative paradigm. The qualitative paradigm allows dipper understanding of the phenomena under investigation. Therefore, in order to understand in-depth the attitudes of managers and accountants towards climate change and carbon related disclosures and motivations for companies' (non-)activities in that area, as well as motivations for those (non-)disclosures the qualitative approach was adopted. However, as was discussed earlier to appreciate the reasons behind practice, attitudes and motivations, one should be informed by the particular context, where exercised practice is taking a place.

3.4.5 Context analysis

As was discussed earlier in this Chapter for interpretive approach of this study it is important to analyse the context where companies operate. Thus, this study considers important analysis of GHG emissions and climate change related disclosures as well as interviews within international, social, historical and political Russian context. The reference to the context is important in interpretive studies in critical paradigm. Kuasirikun (2005) also emphasised the importance of analysis of accounting practice in a wider institutional and political context. As discussed by Kamla et al. (2012, p. 1172) "context-specific developments likely to influence understandings of social accounting and accounting's role". It might also be suggested that understanding of the Russian context can be fruitful in exploration of carbon accounting and companies' role in mitigation of climate change issues. Institutional theory, and in particular neo-institutional theory discussed in section 3.2.5 also emphasise the importance of the context, as this would allow to appreciate possible multiple contradictory logics imposed on organisations, which as was discussed might lead to reassessment of existing practice. Therefore, this research study provides analysis of the Russian context in relation to the issues of GHG emissions and climate change in Chapter 4.

3.4.2 Content analysis

3.4.2.1 Advantage of content analysis

In order to explore the current practice of GHG emissions disclosures the study is analysing carbon related disclosures in various media. The document analysis is commonly referred to as content analysis (Robson, 1998). Content analysis is a commonly used technique in many empirical research studies analysing social, environmental and/or ethical matters (Adams et al., 1995; Guthrie and Abeysekera, 2006; Milne and Adler, 1999; Unerman, 2000). The literature review demonstrated that various studies applied content analysis in relation to GHG emissions and climate change related disclosures, for example, Freedman and Jaggi (2005), Gallego-Álvarez et al. (2011), Hrasky (2012), Kolk et al. (2008).

Krippendorff (2004) goes even further suggesting that "[c]ontent analysis is potentially one of the most important research techniques in the social sciences. The content analysts view data as representations not of physical events but of text, images, and

expressions that are created to be seen, read, interpreted, and acted on for their meanings, and must therefore be analysed with such uses in mind. Analysing texts in the contexts of their uses distinguishes content analysis from other methods of inquiry" (Krippendorff, 2004, p. xiii). Belal and Lubinin (2009) also note that content analysis was a dominant research method within CSR literature in exploration of corporate motivations of social and environmental disclosures. Consistent with interpretive approach utilized in this study, content analysis would be a useful tool, to analyse GHG emissions and climate change related information.

The literature on social and environmental disclosures analysed in Chapter 2 focused on annual reports when conducting content analysis. This is not surprising, as per Bowman (1984, p. 70) "…content analysis of annual reports can be of real usefulness for understanding issues of corporate strategy and can serve as a primary of supplementary source of information…". It is an indirect method of analysis but it allow exploring the current disclosure practice among Russian companies. Qualitative analysis of disclosures made by companies also enables to identify themes in relation to climate change disclosures as well as how those disclosures constructed by Russian companies for further in-depth investigation.

Weber (1990) lists several advantages of content analysis. According to the author, content analysis is a technique that operates directly on the text of human communication: it allows using qualitative and quantitative operations on text, various documents can be analysed, which constitute reliable data; it allows assessing quantitatively the relationships between data and economic, social, political, and cultural change. Weber (1990) also notes that content analysis is not biased in that neither the sender nor the receiver of the textual message know that the text is being analysed. Although the last point might be questionable, as the senders, in the case of this study, managers and accountants must be aware that some stakeholders are reading and assessing disclosed information to some extent. This was also acknowledged by Krippendorff (2004), who notes that content analysis starts with the text, which are meaningful not only to analyst but also to others. According to the author, "all texts are produced and read by others and are expected to be significant to them, not just to the analyst" (Krippendorff, 2004, p. 22). This suggests that when disclosures related to GHG emissions are analysed in this study the researcher should keep in mind and acknowledge that these disclosures are addressed to other stakeholders then to the

researcher. These might be shareholders, government, society, or some other stakeholders not yet considered. In order to find who is the target of those reports the researcher intends to explore the question at interviews with managers and accountants.

3.4.2.2 What is content analysis?

Content analysis was defined variously by different researchers. For example, Weber (1988) defines content analysis as "the method of codifying the text (or content) of a piece of writing into various groups (or categories) depending on selected criteria" (see Milne and Adler, 1999, p. 237). This method, according to Weber (1990), allows to classify textual material and to reduce it to more relevant and manageable volume of data. For Krippendorff (2004) "content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use" (Krippendorff, 2004, p. 18). These inferences can be about those who send the message, about the message itself, or about the targeted audience of the message. It involves codifying not only quantitative information but also qualitative information into predefined categories, which then allows to draw patterns (Guthrie and Abeysekera, 2006).

Broadly, two versions of content analysis can be differentiated: mechanistic (quantitative) and interpretive (qualitative) (Beck et al., 2010). Krippendorff (2013, 2004), however, questions the usefulness of that differentiation. He argues that both types of content analysis are concerned with reading of the text, which is qualitative, even though quantitative approach converts this text into numbers. However, the researcher disagrees with that suggestion, as the mechanistic analysis involves statistical methods and results produced by that approach are rather quantitative. Thus, Beck et al. (2010) explains that quantitative content analysis provide information on disclosure volumes, frequencies, and helps to see correlation between variables, which might impact on that level of disclosure. On the other hand, qualitative approach tries to capture the meaning, as the objective to understand what is communicated and how. Therefore, this study differentiates between quantitative and qualitative approaches, which are both applied to analyse complementary issues.

Schreier (2014) also explains that quantitative and qualitative content analysis are similar, and both are concerned with the systematic description of the data through coding. Thus, content analysis enables to analyse text or other content in a consistent

and systematic way. According to Schreier (2012), qualitative content analysis can be defined as “a method for systematically describing the meaning of qualitative data” (see Schreier, 2014, p. 170). The main difference between these two versions is their ontological and epistemological assumptions. Quantitative content analysis is often used to test hypothesis, where the coding frame is not tied to the research material. While, qualitative content analysis is more interpretive and is used to provide description of the investigated material. In that version the framework, at least partly is derived from the analysed material. Furthermore, Schreier (2014) argues that quantitative content analysis is usually considered as a method of data collection, while qualitative content analysis as a method for data analysis. As in quantitative version, content analysis is a starting point for statistical analysis of the data. Therefore, quantitative content analysis would have more objective orientation, while qualitative content analysis would be more subjective in nature.

Krippendorff (2004) emphasises that research technique should be reliable and findings using this technique should be replicable and valid. Reliability provides assurance that specific research results can be repeated, while validity provides assurance that the claims drawn from the research results were based on evidence (Krippendorff, 2004). The author distinguishes three types of reliability, which are stability, reproducibility, and accuracy. Stability requires that the researcher was able to code the data the same way over time. According to Weber (1988), “the aim of reproducibility is to measure the extent to which coding is the same when multiple coders are involved” (see Milne and Adler, 1999, p. 239). Another issue of content analysis is accuracy – "…accuracy is concerned with how well the coding compares to a pre-set standard" (Linsley and Shrives, 2006, p. 393). The application of these aspects of quantitative content analysis is discussed in Chapter 5.

The quality concepts of qualitative content analysis were derived from quantitative version. Thus, according to Schreier (2014) to measure quality in the qualitative content analysis consistency, which is applied to assess reliability and validity are used. However, in qualitative version these criteria are applied less strictly. The reason is that qualitative content analysis is utilized to latent and more context-depending meaning, which is harder to describe consistently.

Few studies that applied content analysis for analysing carbon disclosures preferred to use quantitative type of this approach. Although there are some studies that applied

qualitative content analysis in the analysis of carbon disclosures, for example, the studies by Dragomir (2012), Kolk et al. (2008). Beck et al. (2010) finds similar tendency to apply mechanistic version among studies analysing environmental disclosures. Most of studies analysing GHG disclosures adopted quite prescriptive theoretical perspective, for example legitimacy or resource-constraint theory. Thus, studies conducted by Freedman and Jaggi (2005), Gallego-Álvarez et al. (2011), Prado-Lorenzo et al. (2009) suggest that legitimacy theory explains the reasons for companies' GHG emission disclosures. Freedman and Jaggi (2005) and Gallego-Álvarez et al. (2011) support the legitimacy theory based on the assumption that companies from Kyoto Protocol ratifying countries disclose more GHG emission information because companies from those countries perceive that it is important for their public image. Study conducted by Luo et al. (2013) employ resource-constrain perspective and finds that financial resources play important role for companies to disclose information on their carbon-mitigation activities, however, the authors do not argue that it is the only reason. The researcher herself believes that quite close theoretical perspective of these studies precludes researchers from getting more detailed information out of climate change related disclosures and possibilities of other explanations.

Tregidga et al. (2012) also states that quantitative content analysis dominating qualitative approach and argue that interpretive and qualitative approaches are needed to analyse organizational reporting and communication. The authors note that there is little known about the messages sent in companies' reports, the manner these messages are constructed and reasons of why those messages produced and communicated. Tregidga et al. (2012) call for investigation of the process and context of reporting, as well as the production and consumption or interpretation of messages produced by companies. The authors refer to the study by Phillips, Lawrence, and Hardley (2004), which calls "institutional theory to focus on the processes that bring about institutions and legitimacy, to take a discursive approach to refocus attention on power and politics, and to recognize that actors act and communicate with political purposes to gain particular ends" (Tregidga et al., 2012, p. 224). For the analysis, the authors suggest to apply the framework proposed by Thompson (1990). The framework presents tripartite approach to the analysis of the text. This approach consists of a socio-historical analysis of the production and transmission of the message, an analysis of the construction of the message, and a socio-historical analysis of the reception and appropriation of the message. This approach to textual analysis is also utilized in this study. This approach

enables to explore how the concept of the climate change issue is structured by Russian companies.

One of the studies that used qualitative interpretive approach in the analysis of reports produced by companies is the study by Laine (2005). In particular, the study aimed to highlight how the concept of sustainable development was used by business organizations, which was achieved by analysing how that concept was constructed in the disclosures by Finnish companies. The author utilized critical discourse analysis, which the author considered more as a philosophical approach than a strict methodological procedure. As Laine (2005) explains, language does not always reflect the reality, but it can be used to construct the reality. The author cites Fairclough (1992) who noted that language can be used as "constituting and constructing the world in meaning" (see Laine, 2005, p. 400). As with the concept of sustainable development, which was explored by Laine (2005, p. 400), the concept of climate change can be considered as a 'blurry concept', which is (re)constructed and (re)produced through discursive action. Qualitative content analysis, or interpretive textual analysis, employed in this study, would allow exploring how the concept of climate change is constructed and reproduced by Russian companies operating in the Russian context. The approach utilized in this study is explained in more detail in Chapter 5.

Thus, it is argued that application of only quantitative approach is quite limited. Indeed, Beattie et al. (2004) claims that quantitative approach conceals any differences in the diversity and quality of disclosed information (see Beck et al., 2010). As researcher's theoretical position is quite open, with tendency to more subjective interpretive paradigm, the qualitative textual analysis is also applied in this research study. Qualitative textual analysis provides detailed insights into the particular ways of 'how', as well as, 'what' particular information is communicated to the readers of different media used by companies. This approach also indirectly exposes the investigator to the production process of the message, in particular to consider those institutions that promote or support the reporting of GHG emission and climate change related information. Based on how the message is constructed, the qualitative content analysis allows suggesting how the message sent by organization might be interpreted. Application of quantitative as well as qualitative methods would provide a more holistic insight into the GHG emission reporting practice than just employing quantitative method. It also should be noted that although content analysis allows analysing text in a

consistent and systematic way, it still involves some degree of subjectivity in the choice of disclosure classification. To minimise this degree of subjectivity rigorous set of decision rules was developed. This subjectivity of content analysis is in line with the philosophical assumptions of interpretive research employed in this study. Details of how content analysis was applied in the present study are discussed in Chapter 5.

Based on the discussion it is suggested that content analysis will be a very useful tool in understanding what issues related to climate change and GHG emissions disclose Russian companies. This method will allow not only investigating the content of GHG emissions disclosures but also the quality of those disclosures when analysed in the specific Russian context. However, as was discussed by Woodward et al. (2001) studies that assess the level of companies' social and environmental reporting, usually applying content analysis, indicate what the company has done but not necessarily why they did it. The authors suggest that investigation through interviews can potentially be richer. The application of quantitative and qualitative subjective interpretive approach is in line with ontological and epistemological assumptions of the researcher. The next section discusses another method applied in this study – interviews.

3.4.2 Interviews

As was mentioned earlier this study aims to explore attitudes of Russian companies' representatives, such as managers and accountants, towards carbon accounting in Russia, to understand the motivations of companies' (non-)disclosure of GHG emissions and climate change related information, motivations for environmental (non-)activities, and to outline the future prospects of carbon accounting and climate change related activities in Russia. According to O'Dwyer (2002) many studies analysing motivations for CSR in annual reports utilized content analysis method. However, the author argues that because of the nature of this technique, it is impossible to understand whether particular reasons, in O'Dwyer (2002) whether the legitimation strategy, motivates CSR. Therefore, he suggests that to understand the motives of CSR there is a need to seek preparer' perspectives. The researcher agrees with this recommendation that the perceptions of those constituencies that take part in a disclosure process would enhance the understanding of companies' motivations for activities related to reduction of climate change impact and motivations for (non-)disclosures of this information. A naturalistic orientation of this study is suited for this purpose as it allows probing of different perspectives rather than suggesting a specific one. This type of research is

carried out in a subjective environment, as the researcher has to interact with interviewees, so qualitative approach is best suited. Thus, the complementary research method employed in this study is interview. This section provides overview of this research method.

Interview is a commonly used method for social research enquiry (Arksey and Knight, 1999; Robson, 1998). According to Baker (1997, p. 130) “an interview is a social situation set up by the researcher, “in order that the respondents speaks openly, authentically or truthfully, to produce valid reporting on some interior or exterior state of affairs”, so that the interviewer can use this speech as “data” in a research” (see Alvesson, 2003, p. 19).

Referring to interviews Patton (1990) notes “there is a very practical side to qualitative methods that simply involves asking open-ended questions of people and observing matters of interest in real-world settings in order to solve problems” (see Arksey and Knight, 1999, p. 1). However, what is worth mentioning is that it is not quite simple as that. According to Alvesson (2011) interview situations are socially and linguistically complex. According to the author interview accounts may be seen as “the outcomes of political consideration, script-following, impression management, the operation of discourses constituting subjects and governing their responses” (Alvesson, 2011, p. 4). The author calls for theoretical understanding in which a set of different theoretical viewpoints can be analysed and, if necessary, applied. Otherwise, the authors claims that “any use of interview materials risks naivety and leaves interpretations standing on shaky ground” (Alvesson, 2011, p. 4). As was mentioned earlier, the objective of this research is not to test predetermined theory but rather derive open themes from literature review, context analysis, and content analysis, but also be open to the themes emerging from the empirical analysis.

Moreover, as with any empirical research, interview-based research should be credible, as readers want to know that they can trust the findings (Arksey and Knight, 1999). To make research credible, such issues as validity and reliability should be addressed. Arksey and Knight (1999) explain how to maximise validity. They suggest that interviewing technique should build relation, trust and openness, which enables interviewees to express themselves; questions should be build based on literature and from pilot work; key questions should be raised; prompts can be exercised to encourage

clarification; a research sample should fit the purpose of the study; possible effects as time or settings should be considered.

Reliability refers to reduction of interviewer's bias so that the findings are not the product of the research instrument or the interviewer's improvisations. It is worth remembering that complete reliability is not achievable, but it can be maximised (Arksey and Knight, 1999). Consistency is one of the aspects of reliability, requires the researcher to show how the research has been conducted and how the decisions have been made. The researcher has to demonstrate how unavoidable inconsistencies were considered and handled (Arksey and Knight, 1999). Truth value is another aspect of reliability mentioned by Arksey and Knight (1999). According to the authors, the researcher should demonstrate that he or she has captured what really the interviewee means, which is achieved by checking your understanding with interviewee. Third aspect is neutrality, which should also be considered by the researcher (Arksey and Knight, 1999). Obviously, interviews are quite subjective in nature, so according to the authors, this should be reflected in the study.

There are various types of interviews, and a commonly made distinction based on the level of structure of the interview. Semi-structured interviews suggest that interviewer has prepared a set of questions in advance, however contrary to structured interviews, the interviewer is free to modify the order of when questions are asked, can change the wording of the question, can provide explanation if necessary, can probe respondents and ask for clarification (Arksey and Knight, 1999; Robson, 1998). Thus, the interviews of this type are loosely structured around key themes and generate qualitative data. According to Alvesson (2011), it is important to conduct interpretation of empirical material on an on-going bases during practical work, and it should not be left until the researcher has all transcripts ready, as this might be too late. This approach can help to "deal with unwanted ingredients" (Alvesson, 2011, p. 46). Thus, Alvesson (2011) suggests that quite loose structure should be adopted for interviews.

Based on above discussion it is suggested that semi-structured interviews will be useful method in answering research questions in this study. Moreover, the loose structure of semi-structured interviews is in line with philosophical assumptions of the researcher, as it allows to build open questions around themes which are being analysed but it does not restrict the researcher to add additional questions if needed.

According to Arksey and Knight (1999) semi-structured interviews are most commonly used format. For example, studies conducted by Belal and Owen (2007), Bhattacharyya (2011), Gray et al. (1995), Islam and Deegan (2008), Kamla et al. (2012), Larrinaga-González et al. (2001), Lodhia (2003), Lovell et al. (2013, 2010), O'Dwyer et al. (2005), O'Dwyer (2002), Woodward et al. (2001) used semi-structured interviews in attempt to analyse the attitudes of different constituencies towards social and environmental issues. For the purpose of answering of a set of questions in this study it was considered appropriate to employ semi-structured interviews.

Thus, semi-structured interviews suggest that some themes had to be covered, but in quite broad and flexible way (Alvesson, 2011). According to Alvesson (2011), there are relatively few questions prepared by the researcher and they are often open-ended. This approach provides some space for the interviewees to elaborate on their experiences, allowing the interviewees to bring what they see as relevant and for an exploration in more detail.

It is intended to use recording equipment in interviews in case the permission form the interviewee will be granted, otherwise notes will be taken. Recorded interviews then will be fully transcribed. According to Alvesson (2011) full transcription is optimal as it enables to make interpretation work more precise and allows to present exact quotations, although it might be time consuming. According to Fontana and Frey (2000) for analysing interviews, what should be kept in mind that results of interviews should be interpreted in the context where they were gathered, otherwise we cannot claim that they are objective (see Alvesson, 2011, p. 142, 2003). Moreover, Alvesson (2011) claims that many studies acknowledge complications related to the context but not develop a theoretical framework to understand context issues. The author calls for more careful interpretation of meanings of interview material, employing critical interpretation and questioning of the data.

Thus, the use of interviews in order to explore views of managers and accountants towards GHG emissions and climate change related activities and their disclosures in Russia, and outline the future prospects of carbon accounting and it's reporting in Russia is in line with philosophical assumptions underpinning this study. Moreover, the approach suggested by Alvesson (2011) to apply critical interpretation of interview 'data' for the analysis also agrees with philosophical assumptions. To answer research question it is considered important to analyse perspectives of those who make decisions

and prepare accounts, so it was considered that views of accountants and managers should be highlighted. Further details on how interviews were conducted, interpreted and analysed are outlined in Chapter 6.

3.5 Chapter Summary

This chapter presents a discussion on approaches to theory, methodology and methods underpinning this empirical study. Laughlin (1995) raised an important issue in accounting empirical research, which is the necessity of adoption of particular perspective on theory, methodology and change. My research approach is consistent with Laughlin's (1995) middle range theory. One of the dimensions of his paradigm suggests a relative openness in respect of prior theorisation. That is, a relatively open approach to theoretical development is taken that is concerned to inform theory development via substantive empirical analysis. The relatively open theoretical stance is informed by a concern to analyse the contextual and institutional setting and a framing that adopts the tenets of neo-institutional theory is found to be very helpful in framing the analysis while being committed to openness and a concern to find things out through empirical engagement. My approach is located in a paradigm that, in terms of those approaches categorising research approaches along two dimensions by philosophical assumptions (e.g. Burrell and Morgan, 1979; Hopper and Powell, 1985; Chua, 1986), is interpretivist. At the same time - and following Burrell and Morgan, who stress that research methods are influenced, not determined, by ontological and epistemological positions (see Gallhofer et al., 2013) - I pursue a multi-method approach to research. While my perspective makes me very conscious of the limitations of quantitative analysis it does not mean that I see no value in such analysis. Indeed, here, I find that quantitative analysis helps to provide a big picture of my research focus. The order of my empirical analysis reflects my interpretivist perspective in that the more quantitative part of my analysis informs the more qualitative analysis from which deeper insights are possible. First, there is a contextual analysis; then a quantitative analysis; then a qualitative analysis (a qualitative content analysis followed by a qualitative interviews approach). Following Chapters (4, 5, 6) present discussions of those methods in more detail: how they were applied and the results obtained by applying those methods. At each stage, however, there is a reflective approach which tries to build up the theory in neo-institutional terms by looking backwards at prior analysis in the thesis and forward to its development. Thus, the quantitative analysis

reflects on the findings through a lens informed by the contextual and institutional insights of the prior chapter while indicating how the theorising can be developed further in the subsequent qualitative analyses. The application of multi-methods here reflects the strength also of triangulation as the understanding is enhanced and deepened. The middle range commitment to being critical informs the analysis and its concerns to explore further areas articulated in the final chapter.

Chapter 4: International, social, historical, and political context of Russia

Consistent with Laughlin' (1995) 'balanced' approach, the study applies interpretive and 'critical' lens when analysing empirical data. As was discussed in Chapter 3, critical orientation of the study means that this study is interested in changing the world in a sense of constructing more environmentally friendly world. Therefore, it is argued that when analysing the empirical data, it is necessary to reflect on the context of the country where the companies operate.

As noted above, this study is focused on carbon accounting practice of Russian firms. One of the reasons is that Russia is one of the energy and carbon intensive countries in the world after the USA and China. As was mentioned in Chapter 2, there is a need to reflect on the context of the country when exploring accounting practice. It is argued that this would allow understanding organisations' GHG emissions disclosure practice, understanding the attitudes of accountants and managers towards GHG emissions and climate change related issues, attitudes towards disclosure of this information, as well as motivation for activities related to reduction of companies' environmental impact, and motivations for those (non-)disclosures.

Furthermore, as was discussed in Chapter 3, institutional theory sees an organisation as a part of a social system. Organisations are influenced by inter-organisational context or organisational field, in which organisation is institutionally embedded (Dillard et al., 2004). Greenwood and Hinings (1996) explain that institutional theorist see structured organisational behaviours as a result of ideas, values, and beliefs that stem from the institutional context. Campbell (2007) also states that companies' behaviour towards their stakeholders (employees, customers, suppliers and local communities) depends on institutions within which firms operate. Therefore, context-specific dimensions are here likely to influence understanding of environmental accounting developments (or the lack thereof), whilst also global insights can be gained through study of the local as well as global.

Thus, this chapter explores climate change issue and approach to mitigate the issue of climate change on the international level (section 4.1). This chapter explores the

environmental situation in Russia generally in section 4.2. It also explores social and historical context in Russia in section 4.3. This chapter also analyses measures taken by the State to mitigate the anthropogenic impact on climate change in section 4.4. The chapter is summarised in section 4.5.

4.1 Climate change issue on the global level

As per Morgan and McCrystal (2009), 97-98 per cent of the scientists agree with suggestion of the IPCC that it is most likely that the warming of the average temperature of the Earth in the second half of the twenty's century is a result of anthropogenic GHG emissions (see Milne and Grubnic, 2011). According to Stern (2008) report, increase of world's temperature for 4-5°C on average would involve radical and dangerous changes for the whole planet and potential risks are overwhelming. Although, there is an agreement that global warming is dangerous for the planet and is resulting from activities of human beings, it seems that there is no universal international agreement on what measures should be adopted to reduce the growth of GHG emissions (Boston and Lempp, 2011). Indeed, the problem of climate change should be embraced by all countries, as it is a problem of the global scale. The very nature of air is that it is not bounded by the boarders of a particular country as, for example, forest or soil, as the wind disperses the air around the world. Furthermore, the measures taken by one country would hardly be enough to keep the world temperature under suitable levels if the majority of countries will continues to exploit the atmosphere. This can still lead to dangerous consequences of climate change. Therefore, there is a need for international cooperation and agreement on the measures to be taken to reduce GHG emissions.

International agreements on the States level were partly achieved through the United Nations Framework Convention on Climate Change (UNFCCC), which was negotiated in 1992 and through the Protocol to the UNFCCC, which was adopted in Kyoto, Japan, in 1997. It is important to mention that not all countries across the globe signed to the UNFCCC and the Kyoto Protocol. Thus, according to the UNFCCC's website, only 192 Parties (191 States and 1 regional economic integration organisation) ratified the Protocol. One of the biggest developed countries in the world that did not ratify the Kyoto Protocol is the United States of America. The first phase of the Protocol, period of 2008-2012, was introduced only after one of the biggest emitters ratified the Protocol. That was Russia. Thus, according to GLOBE International (Nachmany et al.,

2014) ratification of the Protocol by Russia was crucial for international treaty to enter into force. The objection of having big emitters among Kyoto ratifying countries meant that more could be achieved. Thus, the Kyoto Protocol entered into force on 16 February 2005. The main purpose of the Protocol was to develop and to test effective mechanisms to fulfil the purpose, which would be appropriate to all Parties, and to get results that can be used to speed up the progress to the final objective (Lopatin et al., 2005). The Kyoto Protocol is concerned with reduction of such greenhouse gases as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3).

The requirements of the Kyoto Protocol were different for developed and developing countries. Thus, developed countries (Annex I Parties) are required to reduce their emissions for approximately 5% of 1990 levels from the beginning 2008 to the end of 2012, which was the first phase of the Kyoto Protocol. However, the countries of the European Union had higher requirements; those countries were required to reduce their emissions for 8% compared to their 1990 levels in that first phase. Developing countries (Annex II Parties), which includes Russia, were required not to exceed their emissions levels of 1990 in the period from 2008 to 2012.

During the first phase, several countries announced about their decision to withdraw from the Protocol. Thus, in December 2011 Canada sent a notification of withdrawal from the Kyoto Protocol, which became effective from 2012. In December 2010, Japan also indicated that did not intend to have obligations of the second phase of the Protocol. Russian Federation also notified the UNFCCC that Russia was not going to assume a quantitative emission limitation or reduction commitment for the period 2013 to 2020 (UNFCCC, 2012). However, as was mentioned above, there is need for international cooperation between all countries not to mention such countries as the USA, Canada, Russia and Japan. Some countries take measures to reduce their impact but those measures are taken on individual state levels, which are different from country to country. Where then are the incentives to any country to reduce its emissions if there would be a feeling that another country does not do enough? If this should be left to the consideration of different organisation then the question is whether they would take measures to reduce their footprint or not.

The following section provides a discussion of environmental situation in Russia.

4.2 Environmental situation

According to the UNFCCC Report (2008), Russia is an energy and carbon intensive country, as measured by energy per unit of GDP, third in the world in this respect after the USA and China (see Garbuzova and Madlener, 2012). In the post-communism period, the absolute level of air pollution emissions was very high reaching over 3528 million tonnes. However, because of the difficult situation in the economy in the period from 1990 to 1998, there was reduction in carbon emissions Figure 3. Reduction of GHG emissions reflected reduction in production across all sectors of the economy. Starting from 1998 to 2012 there was steady increase in GHG emissions, interrupted in 2009 by a reduction linked to an economic crisis. By the end of the 1st phase of the Protocol, Russian's total emissions were 2,295.05 million tonnes in CO_2 equivalent, which is 31.7% lower compared to 1990, suggesting that Russia achieved its objectives under the Protocol.

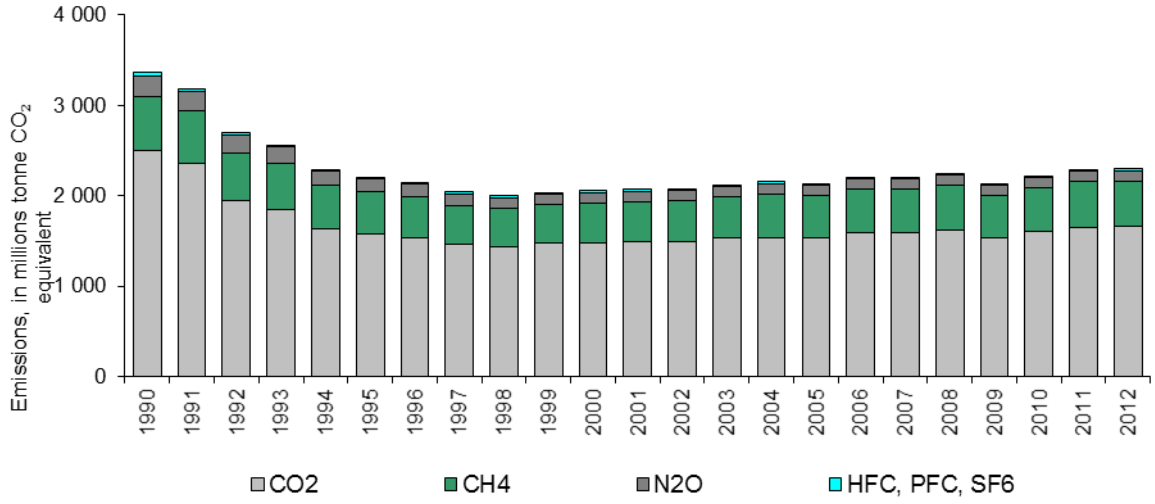

Figure 3. Contribution of specific GHG to Russia's total anthropogenic emissions, leaving out Land Use, Land-Use change and Forestry (for more information see RusHydroMet, 2014).

Although this shows decreasing Russian anthropogenic GHG emissions compared to 1990s levels, Russian environmental performance remains relatively poor. In the Soviet period, there was emphasis on heavy industry due to a development drive, which in turn affected the environment. Following the USSR's collapse, industrial production decreased but personal consumption increased. Previously undeveloped lands were exploited, natural resource extraction increased, while efficiency of production processes decreased. This left Russia among the high polluting countries (Henry, 2010),

consuming 3.2 times more energy per unit of GDP than Europe (Garbuzova and Madlener, 2012) and twice more than the USA (Henry and Sundstrom, 2012).

According to OECD (2011) and RusHydroMet (2014), the largest reason of GHG emissions in Russia is energy consumption. RusHydroMet (2014) report provides a diagram (see Figure 4) of anthropogenic GHG emissions by sectors.

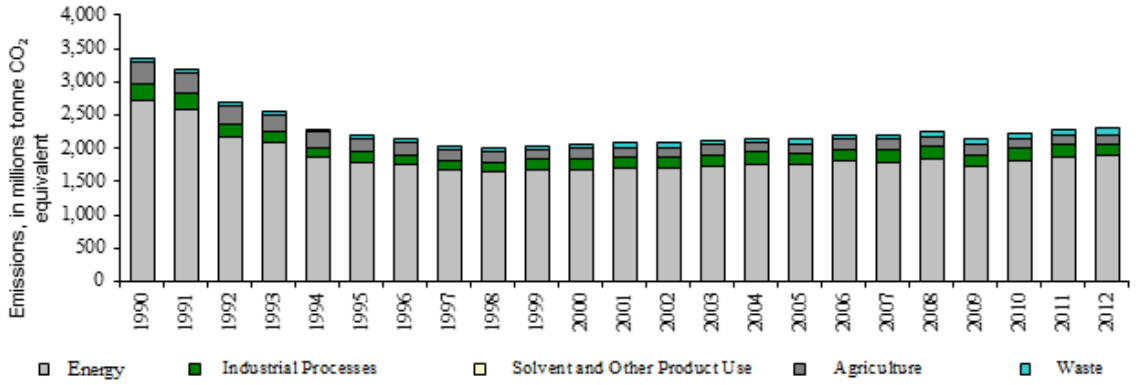

Figure 4. Anthropogenic GHG emissions, leaving out Land in Use, Land-Use change and Forestry (for more information see RusHydroMet, 2014).

Thus, as per RusHydroMet (2014), most of the GHG emissions in Russia were emitted by "energy" sector, which constituted of 80.9% (in 1990) to 82.1% (in 2012) of total emissions. Russia had and still have low level of investment into modernisation of the energy sector which is the reason of huge energy waste and high carbon emissions (Garbuzova and Madlener, 2012). Energy is wasted mainly because of low energy efficiency and of depreciation of technical equipment in Russian companies. According to the World Bank (2008), up to 45% of energy compared to levels in 2007 could be saved if modern equipment was employed, however, in order to renew equipment there is a need for investments. The main categories of sources of GHG emissions within "energy" sectors are burn of fossil fuel, leakage and evaporation of solid fuel, and of oil and gas. Thus, as per RusHydroMet (2014, p. 54), burn of fossil fuel led to emission of 1474.3 Tg[11] of CO_2 equivalent in 2015, while from leakage and evaporation of solid fuel – 48.5 Tg and from leakage and evaporation of oil and gas 362.4 Tg. This suggests that burning of fossil fuel is the main reason of GHG emissions in Russia, which may be a main reason in other countries too. Russia uses such fossil fuels as coal, oil and gas, as well as well as their derivatives. The main categories of sources of GHG emissions in

[11] Tg is a unit of weight measurement, which is equal to 10^{12} grams.

burning fuel are refinery industry, heat and electricity production, industrial production, agriculture, transport, utilities, and consumption by public.

Industrial processes include emissions in production process from crude minerals, from chemical productions, from smelting industry, from food manufacturing and paper-pulp industry, from production and consumption of halocarbon and of sulphur hexafluoride. As in other sectors, from 1990 to 1998 there is steady reduction of GHG emission. In 1998 the level of GHG emissions was minimal, 52.2% of 1990's level (RusHydroMet, 2014). However, from 1999, the volume of GHG emissions started to increase and in 2012 it reached 70.1% of 1990's levels. Here, the main contributor is metallurgy or smelting industry, with 50.7% of all industrial emissions, which is followed by the productions from minerals (27.3%), chemical industry (12.4%) as on 2012.

There was also decrease in GHG emissions in Agricultural sector from 9.6% in 1990 to 6.3% in 2012. During 20-30 years preceding the collapse of the USSR, the production of agricultural produce was high and reached levels of the USA production, although, the efficiency in agricultural sector was declining (Kalugina, 2000). With the collapse of the USSR the production in Agricultural sector decrease because of economic situation, this resulted in reduction of GHG emissions in that sector.

The different situation was in Waste sector, where increase in GHG emissions can be observed (Figure 4). In 2012 the level of pollution increase to 137.4% compared to 1990's levels, because of increased consumption (Henry, 2010).

Although, there was a decrease in anthropogenic GHG emissions in Russia compared to 1990s levels, the environmental performance in Russia is still quite poor. During Soviet Union, there was an emphasis on heavy industry because of necessity for development, while this on its turn affected the environment. However, after collapse of the USSR, when industrial production was decreasing, personal consumption was increasing, untouched lands were exploited as well as natural resource extraction was increasing, while efficiency of production processes was decreasing, leaving Russia among high polluting countries (Henry, 2010). Thus, according to OECD (2011), Russia is the fourth largest overall GHG emitter in the world. One of the ways to reduce GHG emissions is to increase energy efficiency. Thus, according to the OECD report (2011), the largest single reason of high level of GHG emissions in Russia is energy consumption. Energy sector is the most emitting sector in Russia and according to the

World Bank (2008), there is potential to reduce carbon emissions in heat supply for 20%, in power generation for 30%, in industry and transportation for 40% and in dwellings for 50% (Garbuzova and Madlener, 2012). Substantial environmental gains can be achieved if Russia would reduce its energy intensity (OECD, 2011; World Bank, 2008). Moreover, this reduction in carbon emissions can help to save $120-150 billion per year (Garbuzova and Madlener, 2012). OECD (2011) suggests energy efficiency can help to fulfil Russia's aspiration for modernisation of the economy. Otherwise, the reduction of costs can be achieved through such cost advantages as low wages or the higher prices for energy, which in return would worsen environmental issues. But, to achieve energy efficiency the report suggests that technologies, policies and attitudes should be modernised (OECD, 2011).

4.3 Social and historical context

To understand the reasons of high carbon emission in Russia it is necessary to explore social and historical context of Russia so bigger picture can be seen. Russia is one of the fastest growing economies in the world which had to move from centrally planned economic system to the market economy when the Soviet Union collapsed (Belal and Lubinin, 2009). Despite legal and political reforms undertaken after the fall of the communist regime, many environmental problems remain substantively unsolved. In the Soviet Union economic development and plan achievement was more important than environmental protection, and was often achieved by violation of environmental sustainability. This, according to Crotty and Rodgers (2012), led to catastrophic consequences.

Henry (2010) suggests that Russia's environmental problems are rooted in Soviet economic planning, inefficiency of industrial sectors and high levels of pollution in urban areas. Garbuzova and Madlener (2012) explain that issues regarding carbon emissions intensity and energy efficiency could be explained by few factors. First, the USSR during a key stage transition, when companies were being privatized wholesale, was not characterised by an investment culture of modernisation aimed at reducing carbon intensity. Second, managers were reluctant to invest into innovation and reduction of their high energy and carbon intensity because they had no incentives to lower production costs and were rather concerned to meet their production targets. However, after collapse of the USSR, when production actually decreased, this approach did not significantly change, as the pollution per unit of production actually

increased (Crotty and Rodgers, 2012). The OECD report (2011) lists many reasons for Russia's high levels of carbon emissions and high energy consumption:

- the harsh climate in Russia, which leads to increased usage of energy;
- industrial structure;
- losses in energy industry, for example, through associated gas flaring;
- age and inefficiency of the capital stock, such as quite old power plants and electricity transmission infrastructures;
- environmental policies, thus, Russia is the last in implementation of IEA's environmental policies among G8 countries;
- subsidisation of energy to Russian consumers, which in return encourages overconsumption;
- absence of price mechanisms for consumers for marginal consumption;
- low levels of awareness of energy efficiency issues;
- and capital constrains.

For Garbuzova and Madlener (2012) there is low awareness of climate change in Russian society, which is not considered by many Russians as an important environmental issue compared to other environmental problems or policy concerns. This has been reflected in the national political agenda for some time, if Russia ratified Kyoto in 2004. In the Russian scientific community, many scientists are sceptical about climate change negatively impacting on Russia overall (Garbuzova and Madlener, 2012). Some scientists, according to the latter authors, do not believe climate change results from anthropogenic GHG emissions. Adopting another controversial position, some hold that climate change could benefit Russia (Garbuzova and Madlener, 2012). In this latter respect, even Russia's Climate Change Doctrine lists climate change benefits, like decline in energy needed for heating, increased agricultural productivity, or easier access to Arctic seas (Henry and Sundstrom, 2012).

Furthermore, the results of 2004 questionnaire survey conducted by the Russian Wide Centre for Research of Society's Perceptions (WCIOM) suggests that Russian society typically more concerned with social rather than environmental problems, and that business should contribute to society by providing employment, protecting and enhancing health, education and municipal improvement (WCIOM, 2004a). While only 5% of respondents thought that business should also solve environmental issues (WCIOM, 2004b). This emphasis on social obligations may have roots in the Soviet

period, when businesses performed social functions and provided their employees with houses, nurseries for their children, health centres, and children's camps. Economic changes following the USSR's collapse led to companies revising their social functions, often reducing social expenditures and assets to survive.

Here, the role of the media in forming public opinion should be acknowledged. As per Poberezhskaya (2015) the crucial role in translating the issue of climate change raised by scientist into general public language plays the media.

One of the studies that explored the coverage of the issue of climate change and the ratification of the Kyoto Protocol was the study by Tynkkynen (2010). The author focused on the period from 2001, when the US withdrew from the Protocol, to 2004, when Russia announced the ratification of the Protocol. The author interpreted the rhetoric in the media related to climate change as being framed as a policy problem. Tynkkynen (2010) distinguished between three frames: mission, national interest and duty. The author suggests that some articles framed climate change as a Russian mission to the world. These articles emphasises that Russia reduced its GHG emissions and that Russia has forest resources, which are part of the solution. Under that frame, the Kyoto protocol is considered important for political reasons. Under the national interest frame, climate change is suggested is not necessarily resulted from human activities and even such claims that climate change might have a positive effect in Russia are acknowledged. These articles assume that the Kyoto Protocol discriminates Russia, as it does not take into account Russia's need for the economic development. Therefore, it is suggested that Russia should join the Protocol only if it brings significant benefits. Under the duty frame, the articles insist that global climate change is a serious problem, which needs to be tackled. Articles under this frame suggest that economic benefit is not a priority, although it is important part. These articles claim that Russia will benefit from energy efficiency and improved quality production. Tynkkynen (2010) notes that after the ratification of the Kyoto Protocol, the duty frame was utilized by politicians to explain its ratification.

Poberezhskaya (2015) also explored the coverage of climate change issue in the Russian media. The author focused on three events: the climate change conference in Kyoto (1997), the climate change conference in Copenhagen and the Russian Climate Doctrine (2009) and Moscow heat-wave in 2010. The author found that neither the ownership structure nor the degree of dependence of Russian newspapers on advertising influenced

the coverage. Instead, the significant role in the media content was played by the State. Poberezhskaya (2015) found difference in the number of articles published in different periods. The author suggests that when the State resisted taking actions on carbon mitigations (first event) the media chose not to cover the issue from sceptical perspective and chose not to cover the issue at all. On the other hand, when the State changed the policy towards climate change, the media covered the issue from the State's perspective, not questioning its position. As Tynkkynen (2010) the author found that during second period the majority of articles pictured Russia as a leader in negotiating process and that the national economy would benefit from climate change mitigation policies.

Furthermore, NGOs in Russia have scarcely challenged organisations towards better practice in this area. According to Howard (2002), during communism regime, the state controlled social, economic and political activities, while environmental movement was autonomous (see Ljubownikow et al., 2013). Although, environmental activists were separate from the State, they still placed themselves under the State's control so they can have an access to the political elite and as result were actually considered as a part of State system (Ljubownikow et al., 2013). After fall of the Soviet Union, when democratic society emerged, environmental non-governmental groups did not flourish. According to Crotty and Hall (2013) there were several factors that constrained the development of NGOs in Russia:

- a lack of enthusiasm in public participation,
- dominance of Soviet cultural values in political and social institutions,
- lack of domestic funding,
- the values of overseas grants imposed little engagement with citizens,
- 2006 NGO Law[12] restricted funding to domestic sources,
- environmental NGOs lacked legitimacy with the public.

According to Crotty and Hall (2013) NGOs in Russia fail to effectively engage with the state and citizens. While the Russian policy-making process traditionally does not include consultations with NGOs or consideration of public opinion (Henry and

[12] The 2006 NGO Law requires all groups to register with the State, restricts funding to domestic sources and allows official to attend closed and open meetings held by NGOs (Crotty and Hall, 2013). The Law also imposed more stringent reporting requirements, focusing on NGOs funding and its usage, the law outlined people who can form and run NGOs, and allowed liquidation of NGOs that did not meet reporting and registering deadlines (Ljubownikow et al., 2013).

Sundstrom, 2012). Furthermore, NGOs capacity to challenge the State and businesses has been limited as the 2006 NGO Law forces them to seek funds from the State and businesses to ensure their survival. However, to mitigate climate change consequences there is need of policy makers' involvement, and the next section is analysing responses of the State to climate change issues.

4.4 Air protection and climate change mitigation in Russia

Per Crotty and Hall (2013), climate change was not a high political priority for the State either, being largely ignored during the Soviet period as well as during the early years of the country's transition period. During that period there was "unclear distribution of power and responsibilities for the environment, inadequate systems for environmental charges and fines, and lack of appropriate legal system" (Crotty and Hall, 2013, p. 667). Moreover, according to the authors, industries corrupted regulators to manipulate environmental regulations. These factors, for the authors, shifted corporate behaviour in practice away from environmental protection.

Vis-à-vis GHG emissions, several Russian regulations should be considered, if none of these directly focus on climate change. In 2002, Federal Law (FL) No.7 of the Russian Federation (RF) "Concerning Environmental Protection" was issued, and, specifically regarding atmospheric protection, RF FL No.96 "Concerning the Protection of the Atmosphere" was issued in 1999 (State Duma, 2002, 1999). According to the article N3 of the Law economic operations of different parties that have impact on the environment should follow such principles as:

- respect of human rights for favourable environment;
- combination of environmental, economic and social interests of a human, society and the state should be considered to assure sustainable development;
- usage of natural resources at a fee and compensation for the damage;
- independency of the governmental ecological monitoring;
- provision of reduction of the negative impact on the environment, which could be achieved by using best existing technologies, taking into account economic and social factors;
- adherence to the right of everyone to receive reliable information about the conditions of the environment;

- international cooperation of the Russian Federation in environmental protection.

The article N4 of the Law determines the subjects of the environmental protection, one of which is the atmosphere. According to the article N5 of the FL N-7, the state bodies establish conditions of implementation of the governmental environmental monitoring, the order of organisation and functioning of integrated system of environmental monitoring, and establish the state systems for monitoring the conditions of the environment, as well as, records objects that negatively influence the environment.

Thus, the State collects the data on air polluting emissions from all companies operating in Russia through the Federal State Statistics Services (FSSS) (FSSS, 2012). Per RF government decrees[13], companies operating in Russian territory are also required to report their pollution emissions to the Federal Service for Supervision of Natural Resource Usage (FSSNR). This body sets up allowances for every company for each specific gas. Companies emitting more than permitted are fined. Thus, Russian companies[14] are required to disclose to the State annually confidential information about atmospheric protection and air polluting emissions through FSSNR and FSSS. It is expected to be reliable. The form of disclosure in respect of atmospheric protection requires disclosure of total polluting emissions, as well as regarding specific gases. And Juristic Parties (organisations) are also required to provide information on other significant air pollutants.

In relation to the specific question of the air protection, there is also the law, which is concerned with the protection of the air, the Federal Law of Russian Federation N96-FL from 4 of May 1999 “About the Protection of the Air”. The law based on principles of priority of life and health protection of people, present and future generation; provision of safe environment for life, work and leisure; necessity of state regulation of air pollution emissions, as well as transparency, completeness and faithfulness of the information about conditions of the air and its pollution. According to the Article N5 of the Law, the State is obliged to form and conduct integrated state policy related to air protection, establishment of norms of the quality of the air, establishment of the state

[13] Decrees of the RF Government No. 632, 28 August 1992, and No. 344, 12 June 2003.
[14] The FSSS describes companies as Juristic and Physical Parties involved in business activities without forming a juristic party (Individual Businessmen). These companies must provide information to the FSSS.

record system on pollution emissions, provision of allowances for air polluting emissions, and so on.

The Russian record on climate change policy is weak, even though the State has made some attempts to engage with the issues (Henry and Sundstrom, 2012). Vis-à-vis climate change issues, Russia ratified UNFCCC in 1994. Only ten years later, Russia ratified the Kyoto Protocol, which was enforced in all participating countries in February 2005. The relatively late decision to ratify appears shaped by several factors: an intensive campaign by a transitional coalition of environmentalists; economic factors; and, international interests, including sale of extensive emission credits (Henry, 2010; Henry and Sundstrom, 2012). Per Lopatin et al. (2005), economic predictions suggested Russia would not reach GHG emissions limits set for Kyoto's first phase, so the prospect of little additional effort or cost to adhere to Protocol conditions was a key reason for the Protocol ratification. Per Henry and Sundstrom (2012) the decision to take measures in relation to climate change were largely driven by domestic decisions, rather than international influence, to modernise the economy and to increase energy efficiency.

After ratification of the Protocol, Russia was slow to develop policies facilitating participation in the agreement's flexible mechanisms, although Russia could have received huge profits from selling carbon quotas (Henry and Sundstrom, 2012). It is not to say that Russia did not made any attempts to learn how to utilize flexible mechanisms. In fact, Russia adopted an important financial component of the Protocol, Joint Implementation (JI) mechanism, in October 2009, reflected in Government Decree, No. 843, (Government of the Russian Federation, 2009). Decree No.843 defined companies that could apply for JI projects, which were energy, agriculture, forestry, waste products, industrial processes and use of solvents and other products[15]. One of the major state-owned banks, Sberbank, was appointed as a Carbon Units' operator (Nachmany et al., 2014). However, Russia did not utilized those financial mechanisms properly. Thus, as per Henry and Sundstrom (2012), Russian policy-makers until recently failed to take up opportunities to actively engage with climate change domestically or internationally. Moreover, D. Medvedev, Prime Minister at that time, declared:

[15] These are the sectors, which GHG emissions had to be reported to UNFCCC through the Cadastre.

> *"We need to accept that we did not get any distinct commercial benefits from the Kyoto Protocol, could not properly take advantage – that is true"* (Bashkatova, 2012).

As was mentioned earlier, the requirements of the Kyoto Protocol required Russia's GHG emissions to not exceed the 1990s levels of GHG emission by 2012 but the Protocol did not prescribe actions after 2012 (Lopatin et al., 2005). The negotiations regarding the second phase of the Kyoto Protocol started in 2005, which were focusing on GHG reduction from 2012 to 2020. In December 2012 in Qatar, Russia announced that would not participate in the second phase. The special representative of the president on climate change issues, Alexander Bedrizkiy, explained that the negotiations were not constructive because international community did not want to take into account Russia's interests (Uzbekova, 2012). Thus, according to Bedrizkiy, the level of emissions in developed countries is about 15 %, while 30% are emitted by countries that did not join the Protocol, the USA is among those countries, and the other 55% of emissions are accrue to developing countries that persist to any commitments. The rhetoric of the State in this period seems to be framed as national interest, as proposed by Tynkkynen (2010) in the analysis of media content in 2001-2004 period. Although Russia does not intend to limit its emissions on the international level, Russia still considered limitation of GHG emissions on the country's level, in particular reduction of 25% relatively 1990's levels. This, according to Bedrizkiy, corresponds to the country's plan to modernise Russian industry and at the same time Russia wants to have possibility to take part in Emission Trading Scheme and sell emission credits (Uzbekova, 2012). Indeed, in September 2013 the President Decree 861 on "GHG emissions reduction" was published, which established the target that by 2020 GHG emissions cannot to exceed 75% of the total emissions of 1990.

There were other steps taken by the Government to reduce anthropogenic emissions. In particular, President Medvedev's term is characterised by efforts to modernise Russia's economy through increased energy efficiency, which may reduce GHG emissions (Henry and Sundstrom, 2012). Thus, in 2009 the RF Climate Doctrine was issued. The government identified energy efficiency as a major concern and Medvedev called for a 40% reduction of energy intensity by 2020. The objective of the Doctrine is to serve as a blueprint to harmonise Russia's climate change related policies with international standards, improve climate monitoring, and stimulate the adoption of stronger

environmental standards, the adoption of energy-efficiency and energy-saving measures, as greater use of alternative energy sources. The Doctrine also aimed to put the price on carbon, although as was mentioned above, flexible mechanisms were not properly utilized in the first phase of the Protocol.

The Climate Doctrine's objectives were reflected in FL No.261 "On energy saving and improving energy efficiency" (State Duma, 2009), which includes different energy efficiency measures, with greater emphasis on regulations than on voluntary incentives (Henry and Sundstrom, 2012). Among regulatory measures, the Law requires companies to provide information on energy usage and requires of state-funded organisations reduction in their consumption of water, diesel, natural gas, coal, heating and electrical energy from 2009 levels by 3% a year for five years (Henry and Sundstrom, 2012). Voluntary measures, per Henry and Sundstrom (2012), include provision of tax benefits and subsidies to encourage companies to invest in energy-saving technologies or production of energy-efficient products. However, for Garbuzova and Madlener (2012), the Law did not have immediate effects, as innovative, energy efficient technologies in the energy sector will only be introduced 2020-2022, while an increase in renewable energy, excluding nuclear energy, is planned for implementation by 2030. Nevertheless, it remains useful to analyse anticipation of these changes by companies. A new institution, the Russian Energy Agency, was created in 2009, becoming responsible the energy efficiency strategy's implementation through 2020 (OECD, 2011).

Thus, Russia adhered the terms of the Kyoto Protocol form 2005 to 2012. To account for GHG emissions the Kyoto Protocol requires creation of the *Evaluation System* (inventory) of GHG emissions from sources and absorption of GHG emissions by absorbers. The *Evaluation System* was created in 2006, as well as, Russian Register of carbon units by the State Executive Order No.278-p form 1.03.2006 and No.215-p from 20.02.2006 respectively (RusHydroMet, 2014). The function of national body on the *Evaluation System* of GHG emissions was taken by the Hydrometeorology and Environmental Monitoring Federal Service (RusHydroMet), while functions of the Russian Register of carbon units are taken by OAO "Federal Centre of Geo-ecological systems". The *Evaluation System* is created to evaluate anthropogenic emissions, to provide information annually to UNFCCC, preparation of information by Russian Federation in accordance with UNFCCC and Kyoto Protocol, provision of information

to authorities, companies, and population about volume of anthropogenic emissions, development of mechanisms to reduce anthropogenic emissions. According to UNFCCC, Russian National Cadastre includes information about such GHG as carbon dioxide (CO_2), methane (CH_4), nitrogen oxide (N_2O), hydro-fluorocarbons, perfluorocarbons, sulphur hexafluoride (SF_6), as well as information on gases with indirect GHG effect: carbon oxide (CO), nitrogen oxide (NO_x), non-methane volatile organic compounds (NMVOC) and sulphur dioxide (SO_2). According to methods provided by International Group of Experts on Climate Change, emissions are not measured directly but calculated based on fuel consumption or manufacturing products. Thus, according to experts' recommendations emissions should be calculated:

(Human activity, for example, fuel consumption) * (emission coefficient) = emissions (Lopatin et al., 2005).

Thus, information on anthropogenic emissions was provided by *RusHydroMet* annually in the form of Cadastre to UNFCCC. In return, information for Cadastre is provided by such ministries as Ministry of Economic Development of Russia, Ministry of Natural Resources and Ecology, Ministry of Industry and Trade of Russia, Ministry of Energy, Ministry of Transportation, Ministry of Agriculture, Ministry of Regional Development, Federal State Statistics Service (FSSS), and Federal Service for Environmental, Technical, and Nuclear Supervision. The diagram of the *Evaluation System*, presented in Figure 5, demonstrates the process of GHG inventory take.

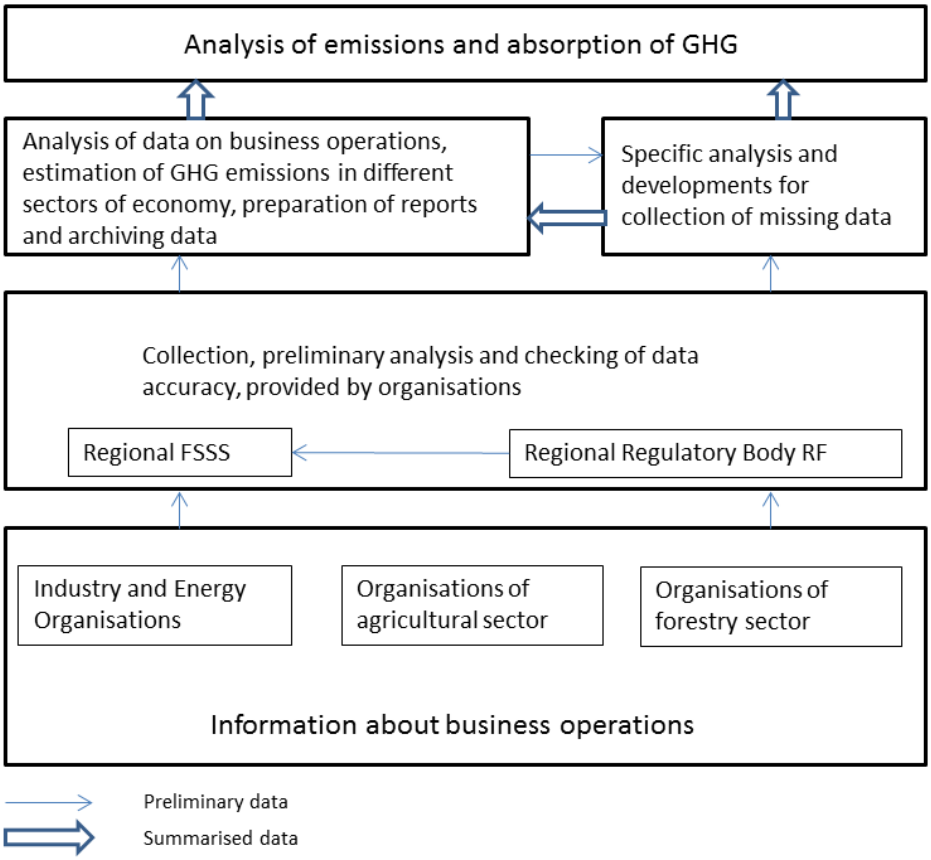

Figure 5. Diagram of the Evaluation System (RusHydroMet, 2014).

As can be seen from Figure 5, preparation of the inventory count includes collection of preliminary data about business operations by regional ministries and bodies, transformation of preliminary data into forms required for calculations; analysis of completeness of information, preparation of transitional data for further calculations; analysis of evaluated GHG emissions and their absorption, as well as provision of those results to users and to UNFCCC.

Thus, one of the institutions providing information on GHG emissions in Russia for the *Cadastre* is the FSSS, which on its turn collects data directly from businesses. According to the rule 09.08.2012 No.441 of the FSSS organisations, which have stationary air pollution sources are obliged to disclose on annual basis information about air protection through the Report 2-TP (Air). The FSSS guarantees confidentiality of provided information according to the Article N6 of the FL No.152 from 27.07.2006 "About Personal Information". On the other hand, information provider is expected to provide reliable information. Breach of the law is the subject of the penalty imposed by section 13.19 of the Code of Administrative Offences of the Russian Federation 30.12.2001 No. 195-Fedral Law and according to Article N3 of the Federal Law

13.05.92 No.2761-1 “About responsibility for the violation of the federal statistical information providing policy”. The Form on Air Protection requires the disclosure of total GHG emissions, as well as disclosure of specific gases, such gases as sulphur dioxide (SO_2), carbon oxide (CO), nitrogen oxide (presented as NO_2), hydrocarbons, volatile organic compounds (VOC). This information should be provided by Juristic Parties (organisations) and Physical Parties (Individual businessmen). Juristic Parties are also required to provide information on other significant air pollutants, the list contains about 101 pollutants, and among those pollutants is methane (CH_4). The Form on Air Protection also requires provision information on the sources of air pollution, information on actions taken to reduce emissions, and information on emissions from different groups of emission sources, as from burning fuel or from production processes. It is worth stressing that the report on Air Protection reflects information only on stationary air pollution sources and does not include information on mobile pollution sources, including vehicles. The Form requires that information on all emissions must be provided; only in the case of not emitting particular gases, this information can be omitted.

FSSNR monitors the air condition and air pollution, as well as how organisations comply with the law “About the Protection of the Air”. According to the instruction issued to the inspectors of the FSSNR in November 2012, inspectors should check such documents of the organisation as information on inventory check of air polluting emissions (according to the article 22, 30 of the FL N-96), limits of allowed air polluting emissions (according to the article 22, 23 of the FL N-7, and the article 12, 30 of the FL N-96), allowance for air polluting emissions (part1 of article 14 of the FL N-96), plans for reduction of air polluting emissions and the report about the progress of that plan in order to achieve the limits (part 4 of the article 12 of the FL N-96) (FSSNR, 2012).

Thus, it can be seen that the State collects the data from different sources, which includes organisations themselves, about GHG volumes emitted, including information about carbon emissions. However, according to the FSSNR companies often violate the requirements related to the air protection, among common violations are:

- absence of inventory check of air polluting emissions, or not conducting it in established deadline;
- partly conducting of inventory check of air polluting emissions;

- provision of unreliable information;
- emission of air polluting substances without allowance;
- infringe conditions of for allowance for air pollution;
- absence in the company of responsible officials for air protection actions;
- not meeting targets of air pollution reduction;
- delay of provision or provision of unreliable information of the Report (2-TP Air) to the FSSS.

Therefore, it can be seen that even though companies required submitting their reports to the FSSS and FSSNR with quite detailed information related to levels of air pollution emissions and steps taken to reduce those emissions, companies still fail to follow those requirements. Although companies obliged to disclose information to the State, they are not obliged to disclose information regarding their emissions to the public. Russia is the biggest country in the world and it might be difficult for the State to control everything, therefore it can be suggested that flexible mechanisms still have to be further developed. Again, the information disclosed to the public through FSSN reports presents aggregated information; therefore, it is impossible to assess how much one particular company emitted. It, therefore, would be beneficial to encourage companies to disclose this information publicly. Here, an important role may play domestic investors, as well as Moscow Stock Exchange (MICEX), which could require disclosure of this information by listed companies.

4.5 Chapter summary

This chapter reviews international, social, historical and political context of Russia, as was discussed in Chapter 3, institutional theory is concerned with the context where organisations operate. This chapter draws attention to the environmental situation in Russia during different periods: the Soviet, transition as well as more recent periods. The centrally planned economic system, which is attributed to the USSR period, had significant influence on the environment. During that period, the production logic was imposed upon the state-owned organizations. Although, after the collapse of the USSR, Russia has reduced its GHG emissions compared to the Soviet period, Russia still accounts for disproportionally large share of global GHG emissions. Russia remains energy and carbon intensive country. When Russia moved to market economy, Russia reduced its production but the personal consumption, extraction of natural resources was increasing while energy efficiency was decreasing. This period can be characterised

by the profit logic among now privately owned organizations, when these organisation were reluctant to modernise capital stock. All these factors attributed to Russia' poor environmental performance.

The chapter also discusses the measures, which were taken by policy-makers to reduce GHG emissions and reduce energy intensity. Russia ratified the UNFCCC in 1994 and ten years later ratified the Kyoto Protocol, under which Russia was required to stay below its 1990's emission level. The chapter discusses the different reasons for ratification of the Protocol. One of the main reasons seem to be the economic benefit from the participating in the Protocol. As was discussed, the requirement to stay below 1990's level and the fact that Russia's production decreased dramatically after the collapse of the USSR, meant that there was no need for substantial changes to meet the requirements of the Protocol, on the other hand participation in the Protocol allowed to utilize financial mechanisms, although Russia was not able to implement those flexible mechanisms either. When Russia was discussing the second phase of the Protocol, Russia could not find consensus with other participants and it was announced that the country would not participate in the second phase of the Protocol. It was argued that the Protocol does not satisfy the national interests. This, however, does not mean that there are no environmental or climate change related policies in Russia. As was discussed, Russia is concerned with an increase of energy efficiency as a way to modernise Russian economy.

Thus, the analysis of the Russian context demonstrates that the State was more concerned with economic benefits when joining the Kyoto Protocol, while internally there was not much of an interest to reduction of GHG emissions, which was reflected in weak climate change policies. Furthermore, the media and NGOs scarcely challenged the policy makers in relation to their climate change approach. As was discussed in the chapter, the content of media coverage was influenced by the views of authorities, which were not questioned by Russian media. NGOs, also being dependant on resources from the state and profit organizations, fail to challenge these constituencies. Furthermore, the analysis also demonstrated that the society in Russia is more concerned with social rather than environmental issues. Several studies acknowledge that there is a low level of awareness in the society about the climate change issue. Taking into account media's role in forming public opinion and its approach to the issue, this low awareness in society is not surprising. Furthermore, the analysis also

demonstrated that domestic investors are not interested in climate change related information, as it is not required for disclosures on the domestic stock market.

Overall, this suggests that the context, where Russian companies operate, does not impose the climate change concerned logic. Instead, the institutional and market context seem to be more concerned with the economic benefit. The economic development and the growth logics seem to prevail in the rhetoric of the State. This, however, leads to question how in this context, where companies are expected to conform to profit generating template, choose to conduct activities that would reduce their GHG emissions and their climate change impact. In order to explore which Russian companies disclose GHG emission and climate change related information, this study proceeds with analysis of diverse media published by Russian firms. The content analysis of voluntary published GHG emission and climate change related information and its results are presented in Chapter 5.

Chapter 5: Content Analyses of GHG emissions and climate change related disclosures

5.1 Introduction

Following the discussed research approach, textual analysis of the empirical material are carried out in a way that would provide insights into the research questions outlined in Chapter 1. As was discussed in Chapter 3 the study employs a mixed-method approach: in this chapter quantitative and qualitative content analyses are discussed. For quantitative version, considered comprehensive enough, the study employs GRI Guidelines as a benchmark to codify disclosures related to GHG emissions provided through different media by Russian companies. Qualitative content analysis is applied to analyse climate change related disclosures. Here, to analyse text comprehensively, a separate coding frame was also developed. It is believed that both these methods provide useful insights into the level of GHG emission and climate change related disclosures among Russian companies. These methods help to understand the characteristics of those companies that are more committed to such disclosures, as well as, help to understand what kind of climate change related information is being disclosed.

However, the triangulation of methods should be exercised carefully. Blaikie (2000) emphasises that the data produced by application of different methods should be interpreted within particular ontological and epistemological assumptions. For Blaikie (2000), one way of combining two methods is to use different methods for different stages of a research project. However, there is complexity involved. For instance, in the case of this study, the data for an aspect of the analysis starts with words (as selected), these being then translated into numbers, facilitating a numerical analysis, which then interpreted qualitatively in words. Furthermore, it is important to reflect on the social, historical and political context to be able to interpret the data critically. Based on results obtained in the contextual analysis and content analysis, the study formulates themes that are further utilized for interviews.

5.2 Research Design

Research design explains the network of steps taken by the researcher to conduct a research project. Content analysis consists of several components that the researcher

needs to undertake to proceed from the text to results. Krippendorff (2013) suggests such components as unitizing (units of analysis), sampling, recording or coding, reducing data, abductively inferring contextual phenomena, and narrating the answer to the research question. The first four components listed by Krippendorff (2013) constitute data making. As per the author, these six components do not need to be organised in order, instead content analysis design may include repetition of particular processes, so a certain quality is achieved. This, approach, however, is more applicable to quantitative content analysis. As per qualitative content analysis, Schreier (2014) distinguishes different steps. These are: deciding on research question, selection of material (similar to Krippendorff's sampling unit), building a coding frame, segmentation, trial coding, evaluating and modifying the coding frame, main analysis, presenting and interpreting the findings. This chapter presents the research design of the quantitative and qualitative content analysis. Sample and unit of analysis sections refer to both methods, while the rest are differentiated between two versions of content analyses.

5.2.1 Sample

In order to analyse GHG emissions and climate change related disclosures within Russian context the study focuses on companies that are included in the Sectoral Indices of the Moscow Stock Exchange "MICEX-RTS". The listing of the company on the stock exchange ensures data availability. As according to the Regulations for Information Disclosure, as approved by the Federal Service for Financial Markets of Russia (FSFM, 2012) all listed companies are obliged to disclose accounting (financial) reports. Moreover, according to the MICEX website: "Moscow Exchange's RTS and MICEX indices are the major benchmarks for the Russian stock market and are widely used by portfolio managers to develop investment strategies" (MICEX-RTS). Therefore, it is considered that companies included in this index would provide a good representation sample for the research.

As one of the objectives of the analysis is to understand the relationship of industry to which the company is related and the disclosing practice, it was necessary to include companies belonging to different industry sectors. Therefore, the disclosures made by all companies included in all Sectoral Indices of the "MICEX-RTS" were analysed, covering Oil and Gas, Electric Utilities, Metals and Mining, Industrial, Transport, Financials, Telecoms, Consumer Goods and Retail, and Chemicals sectors. The sample

covered a range of industries, some understood not to be emissions intensive. It was considered important to include companies from GHG emission intensive and less intensive industries, as this approach would facilitate understanding of the effect of companies' emission intensiveness on the GHG emission disclosure practice. Such sectors as Oil and Gas, Electric Utilities, Metals and Mining, Industrial, and Transport were considered as emission intensive in the analysis, while rest of the sectors were considered as less emission intensive. This differentiation between these sectors was also applied by such studies as Freedman and Jaggi (2005) and Prado-Lorenzo et al. (2009). Thus, all companies, in total 80, from all sectors included in Sectoral Indices of the "MICEX-RTS" were included in the quantitative content analysis. The list of all companies included in the quantitative content analysis is provided in Table 13 Appendix A.

Compared to quantitative content analysis, qualitative content analysis is more time consuming, as it involves large amount of material. However, it was considered important to include in the analysis the sample with companies from diverse industries, as according to institutional theory different industries might have different pressures influencing organisations' practices. Therefore, three companies from each Sectoral Indices of the "MICEX-RTS" were chosen, providing 27 companies for qualitative content analysis. These companies were randomly selected, with the exception of Industrial and Telecoms sectors as these were the only companies available, to reduce to as much as possible incompleteness and bias. The list of all companies included in the qualitative content analysis is provided in Table 14 Appendix B.

5.2.2 Units of analysis

Krippendorff (2013) distinguish three kinds of units in content analysis, which are sampling units, coding units, and context units. On the other hand, Schreier (2014) suggests that there is no need for special data preparation in qualitative content analysis, especially if the study is focusing on themes mentioned in materials. However, the author emphasises that because this version of content analysis is concerned with describing the meaning in the context, the context and the material should be made available. In fact, in this study context was considered particularly important and it was analysed in Chapter 4. Material used in the study is publicly available, and as was mentioned above the list of the companies analysed is included in Appendix B.

5.2.2.1 Sampling unit

Sampling units are the units that are selected to be included in the analysis, for example a certain number of issues of a newspaper. In relation to the data sources used in the SEA research, Guthrie and Abeysekera (2006) found that contemporary research is mainly focused on annual reports for textual analysis, although there some studies that have used other materials. Some studies point to the fact that exclusive focus on annual reports could lead to quite partial picture of disclosure practice (Unerman, 2000). Companies quite often use different media to disclose information, while previously the only accessible media form was the annual report, nowadays there is a spectrum of sources to choose from. As was mentioned above, different researchers use a variety of sources for data inquiry and analysis. Some studies focus only on disclosures made on websites (like Freedman and Jaggi, 2005; Prado-Lorenzo et al., 2009), which has the disadvantage of potentially missed disclosures, some use multiple sources (like de Aguiar and Bebbington, 2014; Pellegrino and Lodhia, 2012; Rankin et al., 2011), which can give richer information about companies' reporting. In fact, Pellegrino and Lodhia (2012) found in their research that the key bodies in the mining industry used a variety of media of communication when utilizing corporate legitimising strategies. Therefore, analysis of a variety of media would reduce the risk of missing information. Additionally, analysis of multiple sources can help to identify the ways companies choose to communicate information to their specific audience, as some of the information disclosed in one source might be missing in another. Thus, Guthrie and Abeysekera (2006) suggest that researchers should broaden their focus and include a variety of SEA material, not only annual reports (paper-based or web-based). In order to address this issue and try to capture a fuller picture and to examine Russian companies' relevant engagement, it was considered useful to include in the analysis different disclosure media used by companies in the sample. Therefore, the study analysed: Annual Reports, Social and Environmental Reports, Sustainability Reports, CDP (Carbon Disclosure Project) Reports, and websites, focussing on the most recently available material. For some companies 2013-year end reports were available, while for others 2012-year's reports. This approach increased the number of analysed media to 196.

5.2.2.2 Recording/Coding Unit and Context Units

"Recoding/coding units are *units that are distinguished for separate description, transcription, recording, or coding*" (Krippendorff, 2013, p. 100). It is part of the sample unit, which is coded under particular category. Krippendorff (2013) explains that it is easier to come to common conclusion in relation to a small piece of text, rather than to the whole document, all the more different meanings may emerge throughout the sample unit. The smallest coding unit is the word. In accounting research, most commonly "word" and "sentence" units are used. For example, such studies as Deegan (2002), Hrasky (2012), Milne and Adler (1999) used the sentence as a unit of analysis. As per Hrasky (2012), words as a unit are too small to provide the thematic meaning, on the other hand paragraphs or pages might contain different themes.

Context units "set limits on the information to be considered in the description of recoding units" (Krippendorff, 2013, p. 101). The author explains that it is not always possible to understand the meaning of the word, for example, without reading the whole sentence, or even few sentences. Thus, the word can be the coding unit, while the sentence the context unit.

In this research study for quantitative content analysis disclosure of a particular elements from GRI guidance was utilized as a coding unit. The GRI framework applied in this study is discussed later in more detail. This coding unit was rather a sentence, as it had to mention, for example, the total emission of greenhouse gases, as well as its value. Here, however, the context unit was not important, as the quantitative content analysis was rather concerned with the fact of disclosure or non-disclosure of GHG emission data.

5.2.3 Recording/Coding in quantitative content analysis

Recording takes place when the researcher interprets what he or she sees, reads, or finds, while coding is the process when the recording is conducted according to researcher-independent rules (Krippendorff, 2013, p. 127). Here, it is important to understand the difference between the quantitative and qualitative content analysis. As was discussed in Chapter 3, in quantitative analysis the process of coding is a starting point, a method for data collection, for subsequent statistical analysis. On the other

hand, in qualitative version, content analysis is a method of data analysis. Here, the emergence of the codes, or in other words themes, is the process of analysis.

In order to code GHG emissions disclosure information in this research project the GRI guidelines were applied as a benchmark, which was also used by Prado-Lorenzo et al. (2009). GRI guidelines were considered as more appropriate for coding among Russian companies, as this was more often applied international guidance for reporting of economic, social and environmental performance and impact, among Russian companies. Some Russian companies applied CDP guidance for reporting to the Carbon Disclosure Project on their GHG emissions, but as the analysis demonstrated, there were not much of those companies. Furthermore, GRI Guidelines were also chosen as the most commonly used across the world. According to KPMG's International Corporate Responsibility Reporting Survey (KPMG, 2011), 95% of the world's 250 biggest companies disclose sustainability performance information, and 80% of those are using GRI Guidelines. GRI promotes sustainability reporting as a way for organizations to become more sustainable and contribute to sustainable development. Disclosures on sustainability performance are voluntary in that there are no legal requirements.

In relation to Environmental Category the GRI Guidelines differentiates between such aspects as materials; energy; water; biodiversity; emissions; effluents and waste; products and services; compliance; transport; overall; supplier environmental assessment; and environmental grievance mechanisms.

As the research analyses GHG emissions disclosures, the benchmark categories are driven from the "Emissions" Aspects, in particular from G4-EN15 – G4-EN19 sections. GRI recommends preparation and reporting of GHG emission data based on the GHG Protocol. The GHG emissions disclosure requirements of the GRI Guidance are based on the reporting requirements of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD)' GHG Protocol Corporate Accounting and Reporting Standard (GHG Protocol) (Global Sustainability Standards Board, 2015). The GHG Protocol includes Scope 1-3 classification of GHG emissions, which are used in GRI Guidance. The "scope", here, relates to the operational boundaries where GHG emissions occur. Thus, direct emissions from operations owned or controlled by the company are reported under Scope 1, indirect emissions from generation of purchased or acquired fuel are reported under Scope 2, and other indirect

emissions that occur outside of the organisation, including both upstream and downstream emissions are disclosed under Scope 3.

Thus, companies' reports were benchmarked against requirements of Scope 1, 2 and 3 emissions. The Guidelines also include such sections as "emission intensity", and "reduction of GHG emissions", as well as additional requirements for Oil and Gas, Electric Utilities, and Metals and Mining sectors. These were also sections were also included in the coding categories. These sum up to forty five indicators, which were included in the analysis.

There are two main approaches to measure disclosures (Guthrie and Abeysekera, 2006). One of the approaches uses the content analysis as a method to codify the text into categories based on chosen criteria, as advocated by Weber (1988). However, this approach according to Guthrie and Abeysekera (2006) is rather focusing on quantity rather than quality of disclosures. The other approach uses disclosure indices to assess, compare and explain differences in the extent and comprehensiveness of disclosures in annual reports, as suggested by Marston and Shrives (1991) (see Guthrie and Abeysekera, 2006). This approach suggests that the researcher has to pre-select items, which then scored, this then provide a measure that demonstrates the level of disclosure (Guthrie and Abeysekera, 2006). For the purpose of this research, as for Freedman and Jaggi (2005), it was considered that quality rather than the quantity of disclosures were more important, so disclosure indices were used. The researcher developed a disclosure index using the content analysis technique that focuses on substance of what is disclosed rather than counting the lines of disclosure. Here, categorical variables were attributed the value of "1" if the specific disclosure related to coding category was made, and "0" was allocated otherwise. This approach was also used in the study by Prado-Lorenzo et al. (2009) and Gallego-Álvarez et al. (2011). The section 5.2.6 discusses how this content analysis technique was applied.

5.2.4 Reducing quantitative data

Reduction of data helps the researcher to represent the data efficiently. Here the researcher can apply the data statistical or other simplifying functions to summarise the data. In order to summarise or reduce the data, the codes were transferred into Excel tables. One of the tables contained the list of benchmarked items from the GRI Guidelines, against which a particular company's disclosures from all materials

analysed for that particular company were matched (see Table 15 in Appendix C). The other table was more detailed and included companies' disclosures across all media (see Table 16 in Appendix D). The table also includes specific requirements of GRI guidelines for Oil and Gas, Metals and Mining and Electric Utilities sectors.

5.2.5 Reliability and Validity

According to Krippendorff (2013) the first four components of content analysis (unitizing, sampling, recording/coding and reducing) are utilized to create the data from raw text. Data, according to the author, should be reliable, as it is used in research for reasoning, discussion, or calculation. As per Kaplan and Goldsen (1965), reliability assures that the obtained data are independent of the measuring event, instrument or a person as well as the data had to remain constant in the measuring process (see Krippendorff, 2013).

Krippendorff (2013) explains that reliability of the research technique consists of three aspects: stability, replicability, and accuracy.

Stability, according to Krippendorff (2013, p.270), "is a degree to which a process is unchanging over time". To address stability issue, the researcher analysed disclosures made by a portion of sample, 25 companies' disclosures, first. In a month time, the process of coding was performed again on the same sample of 25 companies. The process of coding remained unchanged, so the remaining companies in the sample were analysed.

"Replicability is a measure of a degree to which a process can be reproduced by different analysts, working under varying conditions, at different location, or using different but functionally equivalent measuring instruments" (Krippendorff, 2013, p.271). The reproducibility refers to inter-rater reliability and involves the assessment of proportion of coding errors between the different coders. As only one researcher conducted content analysis of disclosures, there should not be an impact of reproducibility in the research technique. As was mentioned above GRI indices were used as a benchmark and the process itself was straight-forward. It can be assumed that the possible problems with reproducibility aspect of reliability were reduced to minimum as the process is explained in detail, if one would want to reproduce the data.

"Accuracy is a degree to which a process conforms to its specifications and yields what it is design to yield" (Krippendorff, 2013, p.271). It assesses coding performance against a pre-determined standard. The author explains that to establish accuracy the researcher must get data under test-standard conditions, which then can be compared with data-making procedure. In the case of this research study, to maintain accuracy, the pilot-company's Annual Report and Sustainability Report were analysed against pre-determined benchmark. For a pilot-company was chosen the biggest company in the sample, as it produced all types of media utilized in the study.

According to Krippendorff (2013), the researcher has to have experience to analyse a particular type of data. Indeed, in this process it was important to learn what scientists considered as GHG emissions, which are different from air polluting emissions. This knowledge was not only drawn from such studies as Bebbington and Larrinaga-González (2008), Stern (2008), Stocker et al. (2013) but also from discussions with scholars at such conferences as CSEAR (Centre for Social and Environmental Accounting Research) and BAFA (British Accounting and Finance Association), and visiting lectures on carbon accounting at the University of Edinburgh.

Validity, according to Krippendorff (2004), assures that the claims drawn from the research results were based on the evidence. The researcher utilized publicly available reports and data on companies' websites. Coded data was transferred into a table for further analysis. Table 15 and Table 16 provide all codes which were utilized in the analysis (See Appendix C and 4).

5.2.6 Analytical Constructs

Based on literature review, this research study developed four models in order to find characteristics of those Russian companies that tend to disclose GHG emissions related information. These models are discussed in section 5.2.6.3. Before presenting the model, the study describes the variables applied in the models, which are discussed in sections 5.2.6.1 and 5.2.6.2.

5.2.6.1 Dependent variables

As was discussed in Recording/Coding section, the G4 GRI Guidelines were used for benchmarking the disclosure of GHG emissions among Russian companies. In the models as dependent variables were analysed "Any Disclosures" and "Total

Disclosures". As was also explained, one point was allocated for disclosure of each categorical item of the GRI Guidance. If information was not provided, then "0" was allocated. Therefore, the "Total Disclosures" were the sum of all categorical items disclosed by the company through different media. And "Any Disclosures" was concerned with awareness of companies to the issues of GHG emissions, so if the company had any disclosure, it was allocated "1", if the company had no disclosures related to any of the categorical items of the benchmark, it was allocated "0".

5.2.6.2 Independent variables

The Environmental Management System *(EMS)* is an independent variable, which is equal to "1" if a company has established an EMS and "0" otherwise. Companies that have an EMS are assumed to disclose this information in their reports. Verified EMS *(ISO 14001)* is an independent variable. Some companies go further and apply for certificate ISO 14001. *ISO 14001* is an independent variable equal to "1" for those firms with ISO 14001-certified EMS and "0" if they have not. The information about *ISO 14001* is obtained from companies' reports.

Compliance with GRI guidelines *(GRI)* is an independent variable, which is equal to "1" if a company uses these for sustainability disclosures and "0" otherwise.

Submission of the CDP[16] questionnaires. Participation in the CDP demonstrates a commitment of the company to communicate internal carbon performance to firms' stakeholders (Luo et al., 2013). Submission to the CDP *(CDP)* is an independent variable. Thus, those companies that submitted the CDP reports were given "1", the rest of the firms were given "0". The information on the CDP disclosures was obtained on the CDP's website.

Listing on international Stock Exchange *(ISE).* It can be argued that international markets might affect the disclosure practice of Russian firms. In order to check the relationship, an independent variable *(ISE)* was included in the model. Companies listed on other markets than only domestic MICEX-RTS were attributed "1", otherwise "0".

[16] CDP is a global not-for-profit organisation. Institutional investors request corporate accountability through CDP reports. CDP was established to pursue two objectives: to make managers aware about investor's concerns about climate change and to inform investors about possible firm's risks related to climate change Stanny and Ely, 2008). CDP argues that the process of disclosing information to CDP incentivizes companies to measure, manage and reduce their environmental impact (CDP website, available at: https://www.cdp.net/Documents/CDP-the-facts.pdf, accessed on: 6.08.2014). Every year CDP sends questionnaires to companies which are then available for investors' use.

Emission Intensive Industries *(EmIInd).* Industries that are GHG emission intensive were attributed "1". These are Oil and Gas, Electric Utilities, Metals and Mining, Industrial, and Transport. Less emission intensive industries - Financials, Telecommunications and Consumer Goods and Retail - were attributed "0". Studies by Freedman and Jaggi (2005), Hrasky (2012), Ieng Chu et al. (2013), Prado-Lorenzo et al. (2009) also differentiated companies by intensiveness of GHG emissions in industries they belonged.

Disclosure expectancy variable *(DEV).* Haque and Islam (2012) found which sectors respondents expected to disclose climate change related information. The expectations were ranked from 1 to 7, where 1 was the highest expected industry. Thus, Electricity, gas, water and waste services where ranked – 1, Mining – 2, Manufacturing 3, Construction – 4, Transportation – 5, Agriculture, forestry and fishing – 6, and Financial and insurance services – 7. This ranking was applied in the analysis.

Firm Size *(SIZE)* is determined as the natural logarithm of market capitalisation, as was used in previous studies (Luo et al., 2013; Rankin et al., 2011). According to Luo et al. (2013) largest companies are more likely to publish voluntarily information on any type.

Profitability *(ROA).* Return on assets, measured as the ratio of net income to total assets. According to Luo et al. (2013), profitable companies have more available resources to solve social and environmental issues than less profitable firms, which are more concerned with economic performance.

In models β_0 is a constant, $\beta_{1\text{-}6}$ are the Coefficients, and ε is a Residual.

Table 1 presents the Pearson correlations between variables used in the analysis.

	DEV	ROA	EMS	ISO 14001	GRI	CDP	ISE	EmIInd
DEV								
ROA	-.097							
EMS	-.0386**	.0204						
ISO 14001	-.0453**	.152	.712**					
GRI	-.043	.111	.416	.354**				
CDP	-.315**	.112	.200	.252*	.241*			
ISE	-.022	.180	.349	.256*	.990**	.263*		
EmIInd	-.751**	.134	.495**	.521**	.060	.248*	.021	

Note: **Correlation is significant at the 0.01 level; *Correlation is significant at the 0.05 level.

Table 1. Pearson correlation

The variables *DEV* and *EmIInd*, *EMS* and *ISO 140001*, and *ISE* and *GRI* show significant correlation with each other, which suggest multicollinearity problem. Multicollinearity is not a bias parameter and its exclusion can influence the accuracy of the inference. However, the robustness check demonstrated that multicollinearity affected the results in our case, so restrictions had to be applied to avoid statistical problems. These restrictions were applied in the models, presented below.

5.2.6.3 The Models

The first model measures the propensity of Russian companies for (non-)disclosure of GHG emissions information, so a binary-choice logit model is used. Model 1:

$$Any\ Disclosures\ (Disclosure = 1) = f(\beta_0 + \beta_1(ISO\ 14001) + \beta_2(EmIInd) + \beta_3(GRI) + \beta_4(CDP) + \beta_5(SIZE) + \beta_6(ROA) + \varepsilon);$$

The second model is similar to the first model, except instead of *EmIInd*, the *DEV* variable is used. These variables need to be used separately in the models as they are highly correlated (Pearson correlations of variables are presented above in Table 1). Model 2:

$$Any\ Disclosures\ (Disclosure = 1) = f(\beta_0 + \beta_1(ISO\ 14001) + \beta_2(DEV) + \beta_3(GRI) + \beta_4(CDP) + \beta_5(SIZE) + \beta_6(ROA) + \varepsilon);$$

The third model is similar to the first, but instead of the *GRI* variable, the *ISE* variable is used, as they are highly correlated. Model 3:

$$Any\ Disclosures\ (Disclosure = 1) = f(\beta_0 + \beta_1(ISO\ 14001) + \beta_2(EmIInd) + \beta_3(ISE) + \beta_4(CDP) + \beta_5(SIZE) + \beta_6(ROA) + \varepsilon);$$

The fourth model uses OLS regression to capture the extent of emission disclosures. The GRI index is used to measure the dependent variable, which captures the extent of GHG emission disclosures of all companies in the sample. Model 4:

$$Total\ Disclosures\ (Disclosure \geq 0) = g(\beta_0 + \beta_1(ISO14001) + \beta_2(EmIInd) + \beta_3(GRI) + \beta_4(CDP) + \beta_5(SIZE) + \beta_6(ROA) + \varepsilon);$$

The results of all four models are presented in section 5.4, while descriptive statistics are discussed in section 5.3.

5.2.7 Qualitative content analysis approach

Qualitative content analysis is an iterative process, which was conducted in numerous phases. The researcher read the text on several occasions, during and after the data collection process. This iterative character of qualitative content analysis, or in other words of interpretive contextual analysis, was also discussed by Laine (2005). One of the phases was concerned with identification of climate change related themes emerging in companies' reports. Here, the coding frame proposed by Schreier (2014) was utilized. When constructing the coding frame it was important to reflect the Russian context in the framework. This approach allowed exploring whether and how the organizational context influences companies' climate change practices. Furthermore, the differentiation between climate change related themes allowed to understand what kind of climate change disclosures were made by Russian firms and how they were constructed.

Thus, coding in qualitative analysis requires building a coding frame. Coding frame consists of categories, which are aspects of material that the researcher wants to analyse, and sub-categories, which specify the meaning of that material in relation to the main category (Schreier, 2014). Here, in contrast to quantitative content analysis, qualitative version is quite flexible, as it often combines concept-driven and data-driven categories within its coding frame.

Schreier (2014) also explains that selection of suitable amount of material is important, as qualitative research is usually involves a large amount of data. This is the reason of analysing only 27 companies' reports through qualitative content analysis. This however does not mean that only 27 reports were analysed. Suitable amount of data for each of these 27 companies was required. As companies disclose information through different media, the amount of sources analysed increased to 71 documents, which included companies' annual reports, sustainability reports (under sustainability report, the researcher included social and environmental reports, environmental reports or sustainability reports, depending on what document companies produced), CDP reports (where they were available), and websites. Schreier (2014) suggests that when building the coding frame the material should be broken into chunks, for example, according to the topic.

Blaikie (2000) also explains that one of the ways to analyse text is to create categories. Thus, structuring of the framework involves creating categories, while generating involves creation of sub-categories for each main category. Even though those steps can be carried out in a concept- or in a data-driven way, Schreier (2014) discourage to use concept-driven way to generate all categories. The reason is that qualitative content analysis aims to provide a good description, and application of concept-driven way may leave some of the issues uncovered. Therefore, it is better to apply both steps. In this research project, categories were derived from both contextual analysis and analysed reports, while sub-categories were data-driven. The coding frame was constructed based on disclosures of one of the largest companies in the sample. To build the framework the largest company '*Gazprom*' in the sample (pilot) was chosen because it was expected that that company would cover more aspects related to GHG emissions and climate change. Furthermore, that company published information through all types of media analysed in this study, which are Annual Report, Sustainability Report, CDP report, and website. This corresponds with Schreier (2014) recommendation that material for pilot case should cover all types of data and data sources in the material.

Categories were partly concept-driven, issues that the researcher wanted to explore further were drawn from the Russian context, for example, the emphasis of the State of such issues as energy efficiency, the requirement to reduce APG flaring, etc. For generating sub-categories in data-driven way subsumption strategy can be utilized. The sub-category reflected the message that was communicated to readers. For example, in

relation to APG flaring the companies discussed that they needed to follow legal requirements and the level they achieved so far. Therefore, two different sub-categories were created in relation to APG flaring category. All categories and sub-categories are presented in Table 2. This strategy involves assessment of passage after another and involves reading of that piece, checking if that material relates to any sub-category already created, then that material is linked to that sub-category, otherwise a new sub-category is created, then the next passage can be assessed. This process is repeated until no additional concepts can be found (point of saturation). This way were drawn the sub-categories based on a pilot case. For generating categories and sub-categories progressive summarising strategy can also applied (Schreier, 2014). This strategy involved paraphrasing relevant passages, summarising similar paragraphs, which then can be turned into categories and sub-categories.

Category	Sub-category
GHG emissions	
	Risks
	Measures to reduce GHG emissions
	Kyoto Protocol
	Opportunities
	No direct impact
Energy efficiency	
	Energy reduction achieved
	Legal requirements
	Image
	Reduction of GHG emissions
APG flaring	
	Legal requirements
	The level achieved
Eco friendly fuel	
	Legal requirements
	The stage of the transition
Innovations, technologies, and renewable energy	
	Image
	Lack of incentives
Environmental performance	
	Awards
	Pollution emissions
	No environmental disclosures (but social disclosures)

Table 2. The framework for qualitative content analysis

Thus, in this research project, an interpretive in-depth reading of disclosed information was conducted, drawing from the requirements of the State and the Russian context. Climate change related text was categorised in common themes that emerged through context analysis and qualitative reading, while subcategories for the description purpose were data driven, which are provided in Table 2. As the aim of the study is to investigate GHG emission related disclosures, particular attention was paid to disclosures related to climate change and GHG emissions and less to environmental issues in general. However, during the interpretive reading process, some apparent disclosures related to air polluting emissions were identified, which reflected the Russian context and required a more in-depth analysis. In order to explore and explain differences in approaches to climate change issues, companies from the same sectors

were analysed together. This is consistent with Laine (2005), who was also interested in the type of the context where the concepts of sustainable development occurred.

As was discussed in the thesis, one of the questions raised in this study is to interpret disclosures related to climate change. After identifying themes related to the climate change issue, the author was able to explore how the concept of climate change was structured by Russian firms. Here, the researcher aimed to understand the meaning companies attributed to the concept of climate change. The author was interested in how the concept was constructed and reproduced. As was found in the previous chapter, the concept of climate change was controversial at times, when for example, Russia's Climate Doctrine listed the benefits from climate change and on the other hand, international community insisted on the importance of tackling climate change, and investors were interested in disclosures related to climate change and GHG emission, including through CDP reports. Furthermore, as was discussed in Chapter 3, Dacin et al. (2002) suggests that pressures for change, which are imposed by the organizational context do not automatically lead to a breakdown in institutional norms, instead those pressures are interpreted, they are given meaning, and then responded by actors within organizations. Understanding of constructed meaning of climate change would allow appreciating the approach companies employ to tackle the problem.

Tregidga et al. (2012) suggests that Thompson's (1990) tripartite approach can be used to interpret the text. As was mentioned in Chapter 3, this approach helps to explore all aspects of communication: production, construction and consumption. Thus, a socio-historical analysis of the production and transmission of the message suggests that the researcher should consider the institutions that promote and support particular reporting practice. Tregidga et al. (2012) emphasise that the context influences the production of companies' messages. As per the authors, an analysis of the construction of the message should explore not only what is said and how it is said, but also how the concept (for example, climate change, which is explored in this study) is represented in the text. The third approach is a socio-historical analysis of the reception and appropriation of the message, which is to analyse how the message was consumed and interpreted. This tripartite approach is applied in this study. However, as mentioned by Laine (2005), interpretive contextual analysis it is not a strict methodological procedure but rather philosophical approach. The results of the qualitative interpretive textual analysis are presented in section 5.5.

5.3 Presentation of Data: Descriptive statistics

Table 3 - Table 6 present a descriptive summary of the data. Table 3 reports that only 35% of the companies are disclosing information on their GHG emissions. This is slightly lower than in Rankin et al. (2011) on Australian companies, which found 42.8% of companies voluntarily disclosing on GHG emissions. This low level of disclosures can indicate that the issue is not on a corporate agenda or it is not seen as a priority, as suggested by Sullivan and Gouldson (2012). Furthermore, as per Campbell (2007) companies are more likely to behave in socially responsible way if there are strong regulations in place. However, as the context analysis demonstrated it is not the case in Russia, there is no requirement to disclose GHG emission information publicly, nor there any regulation, which would directly require reduction of GHG emissions by firms operating in Russia. It is not surprising then that the level of GHG emission disclosures is so low in Russia. At the same time, there are still those 35% of companies, which disclose this information voluntarily, suggesting that those companies are influenced through other means to adopt international practice.

Table 4 overviews disclosure by sector. The table demonstrates that 33% of GHG emissions disclosures are attributed to Metals and Mining, 32% to Electric Utilities, 27% to Oil and Gas, and 7.5 % to Chemicals sectors. Here, the number of companies in a particular sector should be taken into account. The mean for the industry demonstrates that three sectors, Metals and Mining, Electric Utilities, and Chemicals, disclose approximately the same number of items, while companies from Oil and Gas sector disclose more. On the other hand, companies form other sectors in the sample disclose negligibly. Results in Table 4 are consistent with Ieng Chu et al. (2013), Prado-Lorenzo et al. (2009), Rankin et al. (2011), which also found difference in GHG emission disclosures across different sectors. In particular, those studies found a positive relation between volume of GHG emissions disclosure and expected disclosure level given the company industrial location. Deegan and Rankin (1999) explained that companies operating within environmentally and socially sensitive industries might be more aware of the society's expectations. As a result of the globally institutionalised idea of necessity to disclose carbon emission information, as was found by Kolk et al. (2008), companies from particular sectors tend to adopt GHG emission reporting practice. However, it can be seen that there is a difference in disclosure within a particular sector too, with one company in the sector disclosing nothing and the other much more, for

example, 23 items in Metal and Mining sector. Assuming that organisations within a particular industry might have similar pressures, these results suggest that it is not only external context that influences companies' practices but also internal dynamics of a particular company (Greenwood and Hinings, 1996).

	Frequency	Percentage
GHG disclosing companies	28	35.0
GHG companies not disclosing	52	65.0
Note: n=80, all companies in the sample		

Table 3. Voluntary emissions by companies

Sector	Number of companies	Range of GHG items disclosed	Total number of GHG/sector	Mean for 1 company in the industry	Percentage
Oil and Gas	7	0-20	55	6	27
Electric Utilities	23	0-9	64	3	32
Metals and Mining	16	0-23	66	4	33
Industrial	3	0-2	2	0.7	0.01
Transport	5	0-2	2	0.4	0.01
Financials	6	0	0	0	0.00
Telecoms	3	0-1	1	0.3	>0.01
Consumer Goods and Retail	9	0	0	0	0.00
Chemicals	5	0-8	15	3	7.5
Total	80	0-23	205		100 (appr.)

Table 4. Voluntary emissions by sector

The analysis of different media utilized by companies to disclose information gives opportunity to capture fuller picture, but also allows exploring companies' preferred method for disclosure GHG emissions. Table 5 presents descriptive statistics of media usage. Consistent with de Aguiar and Bebbington (2014) and Hrasky (2012), sustainability reports are more often utilized than annual reports to disclose information related to climate change. In fact, this research study demonstrates that detailed disclosures were mainly made through Sustainability Reports (39.4%), which is unsurprising given these are designed for disclosures related to the environment and society. Different companies use different titles for their social and/or environmental reports: e.g., "Social and Environmental Reports", "Environmental Reports" and "Sustainability Reports". For convenience, these were grouped together under one heading 'Sustainability Reports'. Companies disclose slightly less often through Annual

Reports, in 34% of cases. Less often used are websites and CDP questionnaires, only12.3% and 14.3% respectively. These results suggest that websites are considered less attractive than other media for GHG emissions disclosures by Russian firms. Although some companies disclose quite detailed information on GHG emissions through their CDP reports, there are not many Russian firms that actually collaborate with CDP, only 18% as can be seen in Table 6.

Disclosure Source	Number of GHG disclosures	Percentage
Annual Reports	119	34
Sustainability Reports	138	39.4
CDP questionnaires	50	14.3
Website	43	12.3
Total disclosures (including additional sectoral disclosures)	350	100

Note: n=196, number of media sites chosen by the sample companies in total

Table 5. Preferred media for GHG disclosure

Descriptive statistics for independent variables are presented in Table 6. Most companies in the sample have an EMS (74%) and 59% have ISO14001 certification. As per Sullivan and Gouldson (2012) the fact that the company has a climate change policy, or in the case of this study endorsement of EMS, might indicate the quality of the company's management of environmental risks and opportunities. Adoption of EMS worldwide, as well as companies' objective to gain ISO14001 certification, might indicate the tendency of Russian firms to adopt internationally accepted practice, allowing them to be seen as legitimate participants in the market.

Regarding sustainability disclosures, only 31% of the companies followed GRI guidelines. The majority (82%) did not submit responses to the CDP survey. As mentioned, all of the companies in the sample are listed on the Moscow Stock Exchange, so listing on the MICEX-RTS was not taken as an independent variable. However, the international listing of the company was considered. Thus, 58% of companies in the sample were listed on international stock exchanges, including London, New York, Frankfurt, Hong Kong and Irish Exchanges.

It was also important to explore whether the intensiveness of the industry where the firm operates influences GHG emission disclosures. Therefore, companies were differentiated according the intensiveness of GHG emissions of their industry. Thus, 77% of companies in the sample operate in emissions intensive industries.

	Frequency	Percentage
Environmental Management System:		
No EMS	21	26
Have EMS	59	74
ISO 14001-certified:		
Not certified	33	41
Certified	47	59
Applying GRI for disclosures:		
No GRI	49	61
Application of GRI	31	39
Submitting to the CDP:		
No submission	66	82
Submission	14	18
International listing:		
Not listed on International Markets	34	42
Listed on International Markets	46	58
Emission Intensiveness:		
Emission Intensive Industry	62	77
Not Emission Intensive Industry	18	23
Note: n=80, all companies in the sample		

Table 6. Characteristics of independent variables

Descriptive statistics for disclosure indices are provided in Table 7. Analysis includes only companies disclosing at least one of the items from the GRI guidelines, the purpose being to explore the most common items disclosed. The table reveals that companies are more likely to disclose information on the reduction of GHG emissions achieved compared with a base year. Thus, 86% of disclosing companies in the sample report on the amount of GHG emissions reduction achieved. This result is different from Weinhofer and Hoffmann (2010), which found that companies from 23 different countries (one sector) rarely report on reduction of GHG emissions achieved. The difference could be because of the State's interest in the reduction achieved in relation to GHG emissions, as encouraged by President's Decree 861 on "GHG emissions reduction", published in 2013. Furthermore, companies disclose gases included in calculations in 45% cases, 62% disclose the base year and 41% report on where the reduction occurred. Descriptive results indicate 62% of disclosing companies disclose their gross direct GHG emissions (Scope1), 48% report on what gases were included, 59% disclose the base year for Scope 1, and 40% disclose the consolidation approach used. Less often, companies report on their Scope 2 emissions. Only 28% companies disclosed on gross energy indirect GHG emissions and the base year for Scope 2 and

21% disclosed on the consolidation approach followed. Far fewer companies disclosed information on GHG emissions intensity (21%), while 10% disclosed on Scope 3 emissions.

Variable	Minimum	Maximum	Mean	Std. Deviation
Scope 1 emissions:				
Gross direct GHG emissions	0	1	0.62	0.494
Gases included in the calculation	0	1	0.48	0.509
Biogenetic CO_2 emissions	0	1	0.03	0.186
Base year	0	1	0.59	0.501
Standards, methodologies, assumptions used	0	1	0.21	0.412
The source of the emission factors used and the GWP rates used	0	1	0.21	0.412
Consolidation approach	0	1	0.38	0.494
Scope 2 emissions:				
Gross energy indirect GHG emissions	0	1	0.28	0.455
Gases, included in calculation, if available	0	1	0.14	0.351
Base year	0	1	0.28	0.455
Standards, methodologies and assumptions used	0	1	0.17	0.384
The source of the emission factors used and the GWP rates used or a reference to the GWP source, if available	0	1	0.17	0.384
Consolidation approach	0	1	0.21	0.412
Scope 3 emissions:				
Gross other indirect emissions	0	1	0.10	0.310
Gases included in calculation, if available	0	1	0.03	0.186
Biogenic CO_2 emissions in metric tons of CO_2eq separately from other indirect emissions (scope3)	0	1	0.00	0.000
Other indirect emissions categories and activities included in the calculation	0	1	0.00	0.000
Base year	0	1	0.10	0.310
Standards, methodologies, and assumptions used	0	1	0.07	0.258
The source of the emission factors used and the GWP rates used or a reference to the GWP source, if available	0	1	0.07	0.258
GHG emissions intensity:				
GHG intensity ratio	0	1	0.21	0.412

The organisation-specific metric	0	1	0.17	0.384
Types of GHG emissions included in the intensity ratio	0	1	0.14	0.351
Gases included in calculation of intensity	0	1	0.07	0.258
Reduction of GHG emissions:				
The amount of GHG emissions reduction	0	1	0.86	0.351
Gases included in calculation of reduction	0	1	0.45	0.506
Base year	0	1	0.62	0.494
Standards, methodologies, and assumptions used	0	1	0.00	0.000
Report where the reduction of emissions occurred (Scope 1,2,3)	0	1	0.41	0.501
Note: n=29, disclosing companies in the sample				

Table 7. Descriptive statistics for disclosure indices

5.4 Presentation of Data: Regression results

Logistic regression results for models 1-3 are provided in Tables 8-10. The chi-square value of 46.362 (model 1), 42.994 (model 2), 43.811 (model 3) are significant at p>0.000, suggesting that the models are able to distinguish between disclosing and non-disclosing firms. Moreover, 81% of cases were correctly classified by models 1 and 2, and 82.3% of cases by model 3.

Regression results for Model 1 are provided in **Error! Reference source not found.**. These results suggest that companies operating in emissions intensive industries are more likely to disclose GHG emissions information. These results are consistent with Ieng Chu et al. (2013), Prado-Lorenzo et al. (2009), Rankin et al. (2011), suggesting that carbon intensive companies are more likely to disclose GHG emission information, and Jaggi and Zhao (1996) finding that managers from industrial and utility sectors felt that they had a greater responsibility to disclose. Furthermore, Hrasky (2012) also found that companies from carbon intensive industries respond differently to companies from less carbon-intensive sectors. The author found disclosures by companies from less carbon-intensive sectors tend to be symbolic rather than reflecting substantial underlying activity. The author suggests that companies from carbon-intensive sectors tend to employ moral legitimacy strategy, while trying to reduce their carbon footprint, suggesting that companies are actually disclosing their real actions. Although the author cautious that this might be a way of reducing scrutiny. Ieng Chu et al. (2013) and Rankin et al. (2011) suggest that companies from carbon intensive industries provide

more disclosures in order to mitigate regulatory, physical and reputational risks and pressure the industry is facing for pragmatic reasons. Furthermore, it can be suggested that companies from these carbon intensive industries are expected to provide those disclosures in order to maintain their legitimacy. The literature review demonstrated that mainstream institutional investors are interested in SEE information (see Solomon and Solomon, 2006). In fact, one of the reasons of establishing CDP reports was to increase awareness among investors and organisations about the importance of climate change, and, as was found by Kolk et al. (2008), CDP was a successful mechanism for institutionalisation of carbon reporting. Kolk et al. (2008) found that the number of investors involved in the CDP reports increased significantly over the years from 35 in 2003 to 310 in 2007. Therefore, as per institutional theory, it could be suggested that in order to be seen as legitimate participants in the market companies operating in emissions intensive industries adopt globally accepted carbon disclosure practice.

Some previous studies Freedman and Jaggi (2005), Ieng Chu et al. (2013), Prado-Lorenzo et al. (2009), Rankin et al. (2011) and Stanny and Ely (2008) find a positive association between company size and carbon emissions disclosures. Results of these studies are consistent with findings of this study, as positive association of company size and disclosure of GHG related information was also found here. Prado-Lorenzo et al. (2009) and Stanny and Ely (2008) suggest that large companies are more closely scrutinised and as a result, those companies are more likely to voluntarily disclose information to investors. Ieng Chu et al. (2013) suggests that larger firms provide those disclosures to mitigate the risks and pressures the industries are facing. However, it can also be suggested that it is not only scrutiny, risks and pressures upon large companies that influence the adoption of a practice, but large companies also have financial and human resources to actually be able to adopt a new practice.

Rankin et al. (2011) suggest that such characteristics of the company as EMS, certified EMS (ISO 14001) and disclosure to the CDP might also influence to disclose GHG emission information. This study does not support the first of these characteristics but does find significant positive correlation between CDP disclosures (as well as GRI compliance) and disclosures related to GHG emissions. As in Freedman and Jaggi (2005), Ieng Chu et al. (2013), Rankin et al. (2011), this study did not find any correlation between GHG emission reporting and profitability, measured as ROA.

Variables	Coefficient	S.E.	Sign. (p)
(Constant)	-4.041	1.246	0.001**
ISO 14001	-0.856	0.853	0.316
EIInd	3.254	1.356	0.016*
GRI	1.361	0.854	0.111
CDP	2.824	1.205	0.019*
SIZE	1.280	0.619	0.039*
ROA	-0.161	0.344	0.640

n=80 (all sample companies); *p>0.05; **p>0.01 (two-tailed); Cox and Snell R^2=0.444; Nagelkerke R^2=0.607; Classification table – overall percentage correct=81

Table 8. Logistic regression results (Model 1)

Variables	Coefficient	S.E.	Sign. (p)
(Constant)	-0.420	0.832	0.614
ISO 14001	-0.386	0.800	0.629
DEV	-0.348	0.170	0.041**
GRI	1.283	0.812	0.114
CDP	2.647	1.175	0.024**
SIZE	1.015	0.543	0.062*
ROA	-0.130	0.338	0.700

n=80 (all sample companies); *p>0.1;**p>0.05 (two-tailed); Cox and Snell R^2=0.42; Nagelkerke R^2=0.574; Classification table – overall percentage correct=81

Table 9. Logistic regression results (Model 2)

Logistic regression results for Model 2 are presented in Table 9. As in Model 1, results for Model 2 demonstrate a positive relationship between company size, disclosures to CDP and disclosures of GHG emissions. Results for this model indicate that the higher the expectancy of GHG reporting, given the sector where the company belongs, the more likely that the company from that sector will disclose GHG emissions information. This is consistent with Model 1, which found that companies from carbon intensive industries disclose more GHG emission information. Thus, the results of Model 2 also suggest that those companies that are expected to disclose more adopt GHG reporting practice in order to be seen as legitimate participants in the market.

The regression results for Model 3 are presented in **Error! Reference source not found.**. Model 3 is similar to Model 1 but intends to show the effect of international listing of a company on its disclosures. The table indicates no relationship between companies' international listing and disclosure of GHG information, as was also found by Ieng Chu et al. (2013). This result is also consistent with the Luo et al. (2012) study, which suggests that financial market pressure or the information needs of market participants do not affect the decision for disclosure, and with Wegener et al. (2013)

who found that domestic institutional investors rather than foreign institutional investors can influence managers' decision to disclose information to the CDP.

Variables	Coefficient	S.E.	Sign. (p)
(Constant)	-3.666	1.258	0.004**
ISO 14001	-0.439	0.771	0.569
EmIInd	2.998	1.313	0.022*
ISE	0.234	0.733	0.749
CDP	2.814	1.163	0.015*
SIZE	1.693	0.601	0.005**
ROA	-0.247	0.342	0.470

n=80 (all sample companies); *p>0.05;**p>0.01 (two-tailed); Cox and Snell R^2=0.426; Nagelkerke R^2=0.582; Classification table – overall percentage correct=82.3

Table 10. Logistic regression results (Model 3)

Variables	Coefficient	t-value	Sign. (p)
(Constant)	-0.201	-0.190	0.850
ISO 14001	1.866	1.578	0.119
EmIInd	0.586	0.428	0.670
GRI	0.701	0.640	0.524
CDP	5.363	4.082	0.000**
SIZE	1.114	2.143	0.035*
ROA	-0.342	-0.706	0.483

n=80 (all sample companies); *p>0.05;**p>0.01 (two-tailed); Adjusted R^2=35.7

Table 11. OLS regression results (Model 4)

Error! Reference source not found. presents the OLS regression results for Model 4. The results suggest that total disclosures are highly correlated with company decisions to report to the CDP. In fact, all four models analysed in this study consistently demonstrate that the decision to disclose to CDP and GHG emission reporting practice are positively correlated. It is not surprising, taking into account that CDP reports were specifically developed for these types of disclosure. Moreover, the Model 4 suggests that larger companies would tend to disclose more GRI items in their publications. In fact, first three models analysed in this study also demonstrated the size effect, in particular that larger firms are more likely to disclose GHG emission information. These results suggest that larger firms have more resources (human and financial) in order to account for their climate change impact as well as for reporting this information. However, it should be pointed out that "total disclosure" analysed in Model 4 is a more information-rich quantity than "any disclosure", and as such is more difficult to fit. This is reflected in low correlation coefficient (R2).

5.5 Qualitative content analysis results

The interpretations of climate change related disclosures are grouped by industry type below to elaborate industry specific themes emerging during the analysis. As was discussed earlier in this chapter, to arrive at a manageable size for qualitative analysis, three companies were randomly selected from the sample used in quantitative part of the analysis, ensuring 27 companies in total.

Oil and Gas. According to the International Energy Agency (2007), companies in the chemical/petrochemical industry account for 30% of global industrial energy use and 16% of direct CO_2 emissions. As per Dragomir (2012), emissions produced by companies from Oil and Gas industries can be derived from three sources. The author suggests that companies from that sector are the largest emitters of GHG, through their own operations (flaring, combustion, electricity generation) and also from third-party usage of their products.

Russian companies in Oil and Gas sector report measures they have taken to reduce their GHG emissions, including reduction of associated petroleum gas (APG) flaring and switching to production of more environmentally friendly fuel (meeting EURO-4 and EURO-5 standards). However, these measures are required by the Russian law: they are effectively complying with legal requirements. Companies in this sector refer to the legal requirements in relation to the new fuel standard and APG flaring requirements. For instance, the following is from Lukoil's 2013 annual report:

> *"Changes in tax legislation are designed to encourage Russian produce of high-quality products by reduction of excise tax Euro-5 gasoline and diesel fuel. In 2013 excise rates for Euro-5 gasoline were reduced by 8.8%, while excise rate for Euro-4, -3 and lower grade gasolines raised by 27-28%."*(Lukoil, 2013, p. 48).

In relation to APG regulation, *Gazprom* just confirms the requirement:

> *"According to this regulation, the target indicator of associated gas (APG) combustion is established equal to 5%..."* (Gazprom, 2013, p. 18).

However, *NOVATEK* defines this legal requirement as a risk:

> *"[T]he main legislative risk for NOVATEK will be the Russian Federation's legal regulation calling for a 95% disposal level of associated petrol gas…and an increase in the fees for negative effects on the atmosphere caused by APG flaring…"* (Novatek, 2013, p. 5).

Among other measures to reduce GHG emissions and increase energy efficiency, two companies in the sample engaged in renewable energy. However, their discussions reveal a need for incentives to encourage companies to invest more in renewable energy. Thus, *Lukoil* (Lukoil-EcoEnergo) operates four hydroelectric power stations and has some solar collectors. The company has plans to install photovoltaic power and wind power plants in Russia: *"[The company] implement[s] major project that involves the use of renewable energy in countries that passed the laws offering incentives to this business"* (Lukoil, 2012, p. 4).

It is a legal requirement that companies reduce APG flaring and switch to more environmentally friendly energy, and disclosures suggest these requirements are adhered to. At the same time, there are few incentives to switch to alternative energy, and this lack of incentive is aggravated by Russia's own interests for further development.

The interpretive analysis of climate change disclosures among companies analysed in Oil and Gas sector demonstrates that companies try to find a balance between climate change risks and investment project efficiency, or in other words they try to find this "win-win" solution. At the same time, it seems that measures taken by companies are not radical changes. Instead, companies seem to want to reduce their environmental impact but continue business as usual. For example, *Gazprom* highlights that it supplies gas, which is better than burning coal or oil as usage of gas leads to less GHG emissions (see Gazprom, 2013). *NOVATEK* also sees its positive contribution to society, as it

> *"…provides consumers with a reliable long-term supply of gas … during the period required for the development of alternative energy sources"* (Novatek, 2013, p. 9).

APG flaring and energy efficiency disclosures seem to be addressed to authorities, as companies refer to the requirements of the State. On the other hand, climate change related activities seem to be addressed to the international community, as companies

mention their collaboration in relation to climate change with international organizations and other inter-organizational bodies. Lukoil explains that this area was new for them and for Russia in general; therefore, the company was working with Italian company. Furthermore, companies in this sector emphasis that they comply with international standards. Here, however, *Lukoil* complains on Russia's decision to leave the Kyoto Protocol, as because of that company lost money from not participating in the Emission Trading Scheme. On the contrary, *Gazprom* listed Russia's policies in place and emphasised that the company is happy with authorities' approach as it allows them to independently define their approach to emission reductions.

Thus, it seems that companies in this energy intensive sector try to portrait themselves as "good guys". All three companies recognise their impact on climate change. However, *NOVATEK* and *Gazprom* try to redirect attention from themselves to those who produce coil and oil, as usage of these commodities result in more GHG emissions. While, *Lukoil's,* oil extracting company, rhetoric tries to redirect attention from the company to the State regulations, suggesting that it is the State that should be blamed, not them. Thus, although companies in this sector recognise their influence on climate change and disclose GHG emission information, they emphasise that they are better than some other companies are.

Electric Utilities. Companies from the Electric Utilities sample talk about compliance with legal requirements concerning Energy Efficiency and their commitment to reducing energy loss. Thus, *MOESK*, *Kuadra* and *Krasnoayrskaya* elaborate on programmes established and list measures they have taken. For, example, *MOESK* and *Kuadra* mention modernisation of equipment, reconstruction of distributing networks, installation of energy saving lamps.

The interpretation of companies' disclosures suggest that companies do not consider themselves as having impact on climate change. Instead, as in Oil and Gas sector, these companies try to redirect attention to other companies. Companies in Electric Utilities sector emphasise the process of energy production in a favourable way when disclosing to their stakeholders. These companies produce and/or transmit energy to users. Some companies in this sector disclose that they produce energy using renewable energy sources, such as water flow, sea tides, wind, geo-thermal energy and atomic energy. Thus, *MOESK* and *Krasnoyarskaya* emphasise that compared to other industries they have negligible impact (*MOESK*) or no impact at all (*Krasnoyarskaya*):

> *"OJSC Krasnoyarskaya HPP converts hydraulic energy into electricity. This source of energy is renewable and environmentally clean, the use of which does not alter the energy balance of a region and the country and the planet as a whole and does not contribute to CO_2 emissions"* (Krasnoyarskaya GES, 2013, p. 3).

> *"Compared to other industrial companies JSC "MOESK" climate change influence is negligible"* (MOESK, 2013, p. 3).

This emphasis might suggest that these companies try to switch the focus of the reader from themselves to other industrial companies. *Kuadra,* on the other hand, ignores the climate change issue, as it does not mention it at all in their disclosure. However, all three companies are concerned with energy efficiency and all three refer to the State requirements. Furthermore, *MOESK* highlights that it is working with local authorities on development and implementation of a programme aimed at improvement of the environmental situation in Russia's capital. It is not surprising that companies in this sector are concerned with energy efficiency, as for Electric Utility companies the reduction in energy losses means increase in economic efficiency, which in turn increases investment appeal and a Company's value (MOESK, 2012).

Furthermore, *MOESK* cooperates with international companies in the field of technology and innovation development. It seems that the company sees the potential in a new market – provision of charging infrastructure for electric cars – and works in that direction. Although, the company does not see itself as having substantial impact on climate change, which was mentioned above, the company's activities in the area of climate change suggest that the company is quite pragmatic and innovative in its approach.

Metals and Mining. Quite a different impression is created by a coal extracting company, *Mechel*, in the sample, which expresses more concern about risks to its operations than reducing its carbon footprint. According to International Energy Agency (2007), the global iron and steel industry is also a high energy user, accounting for a quarter of direct CO_2 emissions from the industry sector. *Mechel* is associated with steel, coal, iron ore production, heat and electric power. The company acquired a steam coal-driven power plant in 2007, making it a heavy GHG emitter in Russia. The company does not seem to have GHG emissions targets.

Other two companies, *Norilsk Nickel* and *RusAl*, discuss measures taken to reduce their GHG emissions. Both companies use renewable energy in their processes: hydro energy.

According to International Energy Agency (2007), aluminium production is electricity intensive. Russian aluminium producer *RusAl*, uses primarily hydroelectricity (80%). The company collaborates with International Aluminium Institute. The CEO of *RusAl* acknowledges the importance of costs reduction for the company, in particular energy costs, as the prices for aluminium decreased, while energy prices increased. This issue seem to be critical for the company. This approach to be energy efficient also allows reducing company's carbon emissions and environmental impact. *RusAl* aims to reduce GHG emissions by 50% on 1990 levels by 2015. The company sees climate change as a risk and takes measures to reduce that risk. It seems that company considers that the sustainability approach can be a "win-win" situation for both the company and the environment. The interpretation of climate change disclosures suggest that the company is quite pragmatic in their approach to climate change.

Norilsk Nickel acknowledges that environmental issues are important for them. In relation to climate change, the company states that it does not consider climate change as having any financial implications, risks and opportunities for company's activities. However, the company explains that EMS helps them to create *"... the optimal conditions for improving the Company's performance, both in environmental and general terms"* (Norilsk Nickel, 2013, p. 115). The company finds that their approach to environment increases the competitiveness of the company on domestic and international markets and brings additional recognition at international and in global markets. Thus, it seems that for this company it a "win-win" situation. It is worth mentioning that the company is a member of the international Platinum Group Metals Association.

Regarding the Kyoto Protocol, *RusAl* states that despite Russia's reluctance, the company will continue to decrease GHG emissions. *RusAl* does not critique nor supports the authorities' approach to the issue, however, *RusAl* notes that the company will not be able to continue their projects in Russia. *Mechel* notes positively that Russia's refusal to sign up to Kyoto-2 preclude any material impact on the company. Yet the company operates in the USA, and stricter USA regulations increase risk of reduced demand for coal, so adversely influencing the company's U.S. coal operations.

The company's Lithuanian operations are subject to the EU ETS which also *"could restrict company's operations and/or impose significant costs or obligations"* (Mechel, 2013, p. 31). *Mechel* obviously is aware of the negative impact of burning coal on climate change. The company acknowledges that as a coal produces their business may adversely be impacted by increased regulations. Yet the company has no disclosures of their GHG emissions or about the measures taken to reduce the company's impact. The company, instead, considers risks associated with climate change related regulations as possible additional costs. The rhetoric of the company in relation to climate change seems to be addressed to shareholders and investors to make them aware of possible negative impacts of climate change regulations on *Mechel'*s business activities.

Industrial. Companies in this sector elaborate on their objective to reduce carbon footprint, although none of the companies disclose any specific information on their GHG emissions. *Sollers* works in partnership with global automotive producers. The company notes that it focuses on such environmental areas as "*energy conservation, sustainable use of natural resources, reduction of greenhouse gas emission…*" (Sollers, 2013, p. 78). *UAC* acknowledges about their collaboration with Russian's Academy of Science, which is aimed to develop research and technology in the company. *UAC* lists directions for this development: *"transition to new energy sources, development of new materials, and 'smart' intelligent designs, reduction of fuel consumption, improvement of emission characteristics"* (UAC, 2013 translated from Russian). The company does not mention explicitly that there is a requirement from their customers for improvement of planes' environmental characteristics. However, taking into account that aviation industry is concerned with their GHG emission, since this sector is taking part in the EU ETS from 2013 (see Lovell et al., 2013) and needs to buy emission allowances if a company exceed its permitted levels, it might be suggested that airplane produces are willing to offer environmentally friendlier products to attract potential domestic and international buyers. Thus, it can be suggested that the company sees the necessity to develop in this direction in order to maintain or increase their market share. Another industrial company, *Avtovaz,* reports on new projects to produce hybrid, electric and gas cars, if *Avtovaz* carries out a government contract. Thus, *Avtovaz* explains that the company collaborates with *Gazprom* within the State project in order to produce natural gas vehicles, which they believe would help to reduce environmental impact.

Thus, companies within this sector seem to introduce products that are more energy efficient and have less negative impact on the environment, at the same time do not elaborate on climate change issue and their own impact and GHG emissions. This might suggest that companies try to have more options to meet customers' preferences.

Transport. Analysis in the Transport sector suggests that both airline companies are more concerned with social rather than environmental issues. Despite having the highest rating for CSR among airlines (AAAs), *Transaero* provides no climate change related information, mainly information related to social responsibility. The company notes that it reduced the number of domestic aircrafts of previous generations in its fleet,*"which has a positive effect on the environmental and economic performance"* (Transaero, 2012, p. 18). Environmental performance, however, does not seem to be an objective of the company, which is rather seem to be concerned with the increase of the quantity of new aircrafts as the company elaborates about the increase in the air transport volume and passenger turnover. This suggests quite passive approach to environmental issues.

Aeroflot provides information on both social and environmental and energy saving activities. The company carried out activities concerning to participation in the EU CO_2 ETS. The company noted that it collected the data on GHG emissions, however, this information was not reported in their annual report. The qualitative reading of the information related to participation in the EU ETS suggests that the company is only focusing on carbon emissions on the flights to and from EU countries. The company is in partnership with SkyTeam alliance. Thus, *Aeroflot* is aware of international requirements regarding air transportation, but the measures taken seem to be partial.

Another company in this sector is *FESCO*, the company that provides logistic services using railway transportation and marine routes. Although *FESCO* pays no less attention to social issues than *Aeroflot* and *Transaero*, it elaborates on environmental issues and in particular on climate change. *FESCO* explains the importance of climate change issue for the company and that the company adheres the requirements of Russian regulations and international standards, which was the reason for them to join the Copenhagen Protocol on the reduction of emissions. The company has environmental policy, which is aimed to reduce the environmental impact of the company. As a response to global warming, for example, the company offers international transportation via the Trans-Siberian Railway as the alternative to marine routes, prioritize more environmentally friendly investments, and use the best available technologies. It seems that the company

undertakes proactive activities in relation to protection of the environment. However, the content analysis demonstrates that company does not have any disclosures related to their own GHG emissions.

Financial. Financial companies do not provide actual data on GHG emissions but list measures taken to reduce their carbon footprint. These include improvements in energy usage, paper consumption (more electronic document transactions), lighting and air conditioning systems and office equipment. Companies also conduct campaigns aimed at promoting environmental responsibility within the company. For example, *VBank* states that while the company does not directly affect ecology, they realise what they have indirect impact on the environment through consuming electricity and heat energy and car park usage. *VBank* states that it monitors the environmental impact as a part of their lending policy, stating that the company does not lend to organisations that cause a significant environmental harm.

VTB also mentioned that they provide financial support to projects promoting environmental protection and contributes to raising environmental awareness in the business community. *VTB* and highlight the company's move to "smart" office facilities in Moscow, being resource and energy efficient. However, the company seems to be concerned with resource and energy efficiency because of necessity to reduce their costs.

Sberbank also adheres the concept of responsible financing. Thus, the company considers social and environmental risks in lending and investment processes. The company explains that this is *"a component of risk management system as social and environmental problems of borrowers may result in financial and reputational risks"* (Sberbank, 2013, p. 40). *Sberbank* also states that holds events aimed to raise environmental awareness. To reduce indirect environmental impact, *Sberbank* finances alternative and renewable energy sources, and takes energy efficiency measures including "smart heat supply networks" in Moscow, and wind farms and solar electric plants in Ukraine.

Although, companies in this sector do not provide detailed information on GHG emissions, companies are aware of environmental and climate change issues. Companies take measures to reduce their own impact and also take opportunity to influence borrowers and increase their awareness in those issues. Companies in this

sector are concerned with risks associated with companies that have significant environmental impact and choose not to lend to those companies. Companies in this sector seem to have similar approach and it is worth to mention here that companies in financial sector are members of national and international associations.

Telecoms. Two companies do not provide information on their carbon footprint but on measures they have taken to reduce it. *MTS* reported implementation of the Eco-office programme, aimed to reduce energy, paper consumption and to raise awareness about environmental issues. The company mentioned that there are other companies like Google, Intel, Schneider Electric in Russia that have Eco-office programme in place. This suggests that the company follows common business practice in IT sector. MTS explains that the company uses substantial energy in its operations and because energy in Russia is produced by non-renewable energy (using coal and gas) the company is concerned with reduction of energy intensity and takes measures to increase their energy efficiency. *MTS* also acknowledges that it uses renewable energy, such as hydro and solar batteries, at some of its base towers. *Megafon* lists measures to reduce its environmental impact, including increased energy efficiency, reduction of paper consumption, video-conferencing to reduce vehicle usage. The company also delivers youth education programmes to raise awareness about environmental problems. The other company, Rostelecom, indicates that it has a small effect on the environment, despite that it "*use[s] best endeavours to enhance energy efficiency of the business and reasonable use of resources"* (Rostelecom, 2015, p. 85). In relation to energy efficiency, the company refers to the regulation FL 261. The company states that it uses renewable sources of energy in regions where it is possible. *Rostelecom* is also concerned with climate change and necessity to reduce carbon emissions, which also allows economising resources. *Rostelecom* also tries to raise awareness among young population about importance of environmental protection. The company lists measures it takes to reduce its GHG emissions, although the company, as the other two companies in this sector, do not disclose information about its GHG emissions.

The analysis demonstrates that companies in this sector undertake similar measures to reduce their environmental and climate change impact.

Consumer goods and retail. *Pharmstandard, M. Video* and *Magnit* provided no climate change related information, or even information related to air polluting emissions required by FSSS and FSSNR. This is particularly surprising in relation to *Magnit*, a

leading Russian supermarket chain, which uses considerable levels of energy and fuel. Companies in this sector disclose more on social rather than environmental issues. *Magnit* emphasise that their mission is to increase prosperity of their customers (their prices are among the cheapest). *Pharmstandard,* leader in pharmaceutical sector, focuses on the replacement of expensive imported medicines with equivalent pharmaceuticals produced locally. Although the company mentioned the compliance with ecological standards and its commitment to reduce industrial effect on the environmental, the company does not disclose information on what measures they take to do that. *M. Video* elaborates about social and about environmental activities. The company mentions their environmental projects in national parks, elaborates on measures to reduce environmental impact, e.g., selling only energy efficient lamps, and encouraging customers to recycle old appliances.

Chemicals. *PhosAgro* and *Acron* do not disclose information on GHG emissions. However, *PhosAgro* states that although the company did not deliver assessments, but in future would redefine its approach because of Presidential Executive Order No. 752 on GHG emissions reduction. The company states that environmental sound practises are embedded in their projects from their commencement and day-to-day operation. *PhosAgro* elaborates on efficiency of energy use as a way to reduce operating costs and on necessity to reduce environmental impacts in order to maintain their licence to operate. The company discloses information on measures taken to reduce their pollutant and GHG emissions, including usage of CO_2 in production process, which allows reducing the emission of GHG into atmosphere. *PhosAgro* also notes that the company is working with international and Russian experts in this direction.

Acron explains that the company conducts measures on environmental protection in accordance with regulations where the company operates. However, the company does not mention the limate change issue in their report.

Uralkali's CEO elaborates on sustainable development, with one of the focus areas – the development of environmental work. The company acknowledges minimisation of energy consumption and CO_2 emissions are one of the key priorities for the company. The company discloses information on their direct and indirect GHG emissions, as well as indicates that it joined to the CDP and provides information to them. *Uralkali* discloses information about company's usage of the APG, which *Uralkali* purchases from oil and gas companies. This, as per the company, allows them *"to reduce*

consumption of natural gas and to ensure lower costs at the Company level, but also to prevent the flaring of associated gas by oil companies, thus reducing global greenhouse gas emissions" (Uralkali, 2013, p. 54). The company also elaborates on energy usage, which it links to GHG emissions, and explains what measures the company is taking to reduce them.

To varying degrees, the companies from this sector acknowledge that environmental protection is important for them. Both *PhosAgro and Uralkali* mention their collaboration with sectoral associations or international or Russian experts.

Overall. Most of the companies analysed in this section elaborate on the importance of environmental protection and take measures to reduce their impact.

Companies from Electrical Utilities, Oil and Gas, Industrial, Financials, Telecoms, Metals and Mining, and Chemicals disclosed information required by the State for compliance.

Thus, as discussed, FL 261 "Energy Saving" emphasises the need to increase energy efficiency. All companies in the sample disclose information on the consumption and reduction of fuel and energy usage, associated costs and savings, and on energy efficiency, many companies referring to the federal law. For example:

> *"In 2013, we continued our energy saving and energy efficient programmes in full compliance with Russian law"* (PhosAgro, 2013).

The analysis also demonstrated that companies link energy efficiency to cost saving activities too. For some companies energy costs are quite substantial. Thus, one of the companies acknowledges high costs associated with energy resources, which is one of the reasons to reduce their non-renewable energy consumption.

The analysis conducted by Habbitts and Gilbert (2007) on climate change issues in sustainability reports across different countries also demonstrated that many companies (86%) disclose information on energy use, making an explicit link between GHG emissions and energy. The authors identify disclosures related to energy efficiency as business risks due to risks associated with future increase in the cost of energy related to climate change. It seems that companies operating in the Russian context are concerned not only with energy costs but also with the requirement of the law.

As required by law, most of the companies also disclose information on polluting emissions to the FSSNR and the FSSS, also displaying this information in annual reports, sustainability reports or on websites. Companies in Electrical Utilities, Oil and Gas, Industrial, Metals and Mining, and Chemicals sectors tend to disclose detailed information about their air polluting emissions: emitted particles, precise reductions and reduction measures taken, and associated costs. Moreover, *Rosneft, Gazprom* also declared a year of "Environmental protection", consistent with 2012 being declared the Year of the Environmental Protection in Russia, and showing governmental influence on companies. *Novatek and Mechel* discussed risks associated with climate change, which is considered important information for investor decision-making.

As was discussed in Chapter 3, institutional theory allows demonstrating that companies respond not only to market pressures but also to institutional pressures, including pressures from regulatory agencies or leading companies. The disclosure of information on energy efficiency and polluting emissions by most of the companies included in qualitative content analysis suggests that companies are conforming to the template of expected behaviour by disclosing information required by the authorities.

As was discussed in previous section (5.4), the quantitative content analysis results demonstrated that companies from emission intensive sectors tend to disclose GHG emission information, suggesting that companies in these sectors are aware of the importance of climate change issue and take measures to reduce the impact. The qualitative content analysis, however, suggest that it is not only emission intensive companies that are aware of climate change issue and take measures to reduce the impact. The qualitative content analysis demonstrates that companies from most sectors find climate change issue important and take measures to reduce the impact. Those measures and reasons for those activities, however, vary from company to company and from sector to sector. Here, however, it is worth mentioning that there seem to be influence of other organisations on climate change disclosing companies. The analysis of climate change disclosures demonstrate that companies that collaborate with other organisations, for example with intergovernmental bodies, different international sectoral associations, international produces, seem to be aware of the importance of climate change issue and disclose this information in their reports.

The analysis also demonstrates that there are clear templates for conformity across different sectors. As was discussed, companies from Oil and Gas sector as well as from

Electric Utilities try to switch the attention from their own climate change impact to the influence of other companies, for example, to coal-extracting companies that contribute more to climate change. Being aware of its substantial influence, coal-mining company analysed in this section, just warns their investors about potential operational risks associated with their negative impact. Both Oil and Gas and Mining sectors try to find "win-win" solution in their approach to the climate change issue. In Industrial sector, companies do not discuss their climate change impact, but aim to produce energy efficient products (cars and aircrafts) for their customers. Companies in Transport sector are aware of climate change issue but seem to be conducting business as usual. Financial sector elaborates on the importance of climate change issue and lists measure taken to reduce climate change impact. In order to reduce potential risks, companies from financial sector assess companies' environmental performance while lending financial resources. This demonstrates that financial institutions in Russia also have influence on other companies' environmental protection approach. Companies from Consumer goods and retail do not discuss environmental issues much and their influence. Two of the companies from Chemicals sector, which the members of different associations elaborate on climate change issues and their measures to reduce their impact.

Moreover, if companies received any awards related to environmental performance, they show this in their reports as something they appear happy to report as an important achievement.

5.6 Chapter Summary

This Chapter presented discussion of application of quantitative and qualitative content analyses. Both methods are utilized in order to answer research questions: the level of GHG emission disclosure among Russian firms, characteristics of those companies that tend to disclose that kind of information as well as understanding climate change related disclosures provided by Russian companies. As was discussed in this chapter, two versions of content analysis have similarities, although probably the main difference is that quantitative content analysis is rather a method of data collection, while qualitative content analysis is a method of textual analysis. The data derived from quantitative analysis was further utilized in statistical and correlation analysis. This chapter presents the results obtained through both versions of content analysis.

Descriptive statistic demonstrates that only 35% of companies in the sample disclose information about their GHG emissions. These disclosures are predominantly made by companies from emission intensive sectors. However, this does not suggest that companies from other sectors are not aware about climate change, rather there seem to be different expectation of what should be done and what should be disclosed by these companies. There is clear difference of what is disclosed by companies in particular sectors that was demonstrated by qualitative content analysis. These results suggest that there are clear templates for conformity promoted within particular sectors as suggested by Greenwood and Hinings (1996). This is also consistent with the authors' suggestion that variations in the degree of tight coupling across institutional sectors provide inconsistent cues or signals, which lead to variations in practice. Furthermore, although quantitative content analysis does not find relationship between companies' international listing and disclosure of GHG information, the finding of qualitative content analysis find the influence of international as well as of domestic associations on climate change disclosures. These results also demonstrate the influence of institutional context on organisational practice. As was mentioned in Chapter 3, sectoral permeability, which is openness and exposure to ideas from other institutional arenas, is also important in institutional context. The qualitative content analysis also shows that companies collaborate on climate change issues not only with organisations from the same sector but also with companies from other sectors. For example, purchase of APG by chemical company from an oil and gas company in order to reduce GHG emissions generally.

As was discussed in Chapter 3, organizations experience pressures from institutional and market context, which impose their own logics or signals. These multiple logics might be contradictory (see Greenwood et al. 2011). As per the author, organizations face institutional complexity whenever they confront conflicting prescriptions or templates from different institutional logics. As was suggested in Chapter 3, the context where Russian companies operate does not seem to impose the climate change concerned logic. Instead, it seems that the institutional and market context are more concerned with the economic benefit logic. This complexity can be observed in discussions about climate change provided by analysed companies. Companies seem to try to find this "win-win" or "sustainable" approach, where companies can reduce their environmental impact as well as their operating costs and increase their profit.

Both quantitative and qualitative content analyses demonstrate differences in disclosures of GHG emission disclosures as well as of climate change related disclosures made by companies within particular sectors. As per Greenwood and Hinings (1996) the reason might be in intra-organizational dynamics, where precipitating and enabling dynamics are considered. The authors suggest that for change to happen, the logics imposed from the context is not enough but there is a need for a recognition of alternative template and dissatisfaction with the template in use. Furthermore, the change might happen only if there is a competitive and reformative value commitment to the template in use. The content analyses demonstrates that companies that disclose GHG emissions information are aware of alternative templates for disclosure, such as GRI guidelines and CDP reports, companies collaborate with associations and other organisations and introduce new available technologies to reduce their environmental impact. However, results demonstrates that not all companies are changing their practices, suggesting that there is competitive rather than reformative value commitment to the profit-oriented template in use.

Furthermore, as per Greenwood and Hinings (1996), a firm might choose to change the practice with support of those who have the power within the organisation. The content analysis does not allow seeing the support for GHG emission and climate change related disclosures of those who have the power within organisation. This support can only be suggested based on that assumption that disclosures are prepared by high level management with approval of CEO of the company and the Board of Directors. This was further explored by the researcher during the interviews with managers and accountants (discussed in Chapter 6). Greenwood and Hinings (1996) also explains that company has to have appropriate capacity for change. The quantitative results demonstrated that larger companies disclose information on GHG emission. This suggests that larger companies have more financial and human resources to implement the necessary changes to measure their GHG emissions.

The quantitative and qualitative results were further utilized when preparing questions for the next stage of this research project - interviews. The following chapter discusses the interview approach applied in this study and its results.

Chapter 6: Perspectives of Accountants and Managers

6.1 Introduction

This chapter examines the perspectives of different constituencies, in particular, companies' representatives, on measures taken by companies to reduce their environmental impact, barriers for undertaking those measures, reasons for (non-)disclosure of GHG emissions and climate change related information publicly, ways how the practice can be changed. As was discussed in Chapter 3, semi-structured interviews were utilized in this study to pursue that objective. Interviews were informed by the peculiarities of the Russian context and the results of qualitative and quantitative versions of content analysis.

6.2 Interview Design

As was Discussed in Chapter 3 in pursue of the objective of the study it was considered that semi-structural interviews would be very useful. The use of semi-structural interviews suggests quite loose structure, which allows gaining more insight into the interviewees' perspectives as this structure do not limit in the specific questions but allows obtaining clarification. For this purpose were designed open-ended questions. At the same time, semi-structured interviews enabled to investigate issues around the areas of interviewer's interest. This suggests the need for a list of topics that should be discussed. Furthermore, this loose structure still requires some level of consistency across all interviews, which is achieved by using a list of topics for discussions. As was mentioned above this list of topics or themes were derived from literature review, contextual and contents analyses. Adoption of loose structure also allows some comparison between interviews and helps to find common themes emerging from interviews. This balanced "approach involves fine tuning of research questions so the theory and practice can evolve from the data rather than framework forcing the questions from the start" (Solomon and Solomon, 2006, p. 571). The framework here emerges from the data, context data, content data and interviews themselves.

6.2.1 Interviewees' profile

The evidence for this study was collected using semi-structured in-depth interviews with 15 different constituencies. Initially the focus at this stage was on perspectives of

managers and accountants from Russian firms; however, the perceptions of public sectors were also considered important and were included in the sample. Table 12 presents the list of companies' sectors as well as positions held by interviewees. The names of the companies as well as the names of the interviewees are not disclosed because of ethical concerns.

Sector	Position
Education, Professional Services	Chartered Auditor, Associate Professor
Oil and Gas	Manager of the Department
Telecoms	Head of the Department
Electric Utilities	Head of the Energy Saving Centre
Electric Utilities	Deputy Managing Director
Electric Utilities	Head of the CSR Department
Beverages	Head of Finance Department (Regional Division)
Financial, Public Sector	Head of the Bank Branch; Finance Department of the City's Ministry of Finance
Transport (Private company)	Chief Accountant
Consumer Goods and Retail (Private company)	Director of the Branch
Food and Beverages	Marketing Director (Regional Division)
Chemicals	HSE Director
Public Sector	Deputy Director
Public Sector	Head of the Department
Mining	Advisor to CEO Sustainable Development

Table 12. Interviewees' role and industry sector

The objective behind the selection of interviewees was to cover a wide range of sectors to inform the results of the content analysis.

6.2.2 Contacting and conducting interviews

Initially 48 constituencies from different sectors were contacted. Different strategies were employed to contact potential participants for the interviews. These included formal cover letters, requests through companies' websites, telephone calls through companies' Call Centres, less formal cover letters through LinkedIn and through personal contacts. It appeared that the most effective ways of obtaining response were through LinkedIn and personal contacts. It is worth mentioning that people personally contacted were not participants themselves but they rather advised those who might be appropriate candidates for the research. Of the 15 interviewees only one had experience

of only 5 years. The majority of interviewees had long-term experience, with mean of 19 years, in management or accounting-related fields.

Prior to the interviews, the interviewees were only roughly made aware of the themes being discussed and definitions of climate change and carbon accounting as it was important to understand their knowledge and awareness about climate change issues before the interviewer contacted them, as was also exercised by Lodhia (2003).

Interviews were open-ended and loosely structured around the themes being investigated. This approach facilitated understanding the perceptions of interviewees instead of direct propositions of the answers. This also permitted to seek clarification if something was unclear, to get insight into interviewees perceptions of climate change issues and actions needed, and the motives for climate change activities as well as non-activities.

The neo-institutional perspective suggests that for change to happen organizations need to be aware of alternative possibilities. Indeed, the content analyses suggested that organizations are aware of the climate change issue. However, it was considered important to seek the perspectives of organizations' constituencies about the importance of the problem for them personally, as well as for Russian companies. Therefore, several questions asked during interviews were related to that (please see Appendix E for the full list of main questions).

As was discussed in Chapter 3, Greenwood and Hinings (1996) suggest that institutional and market context put pressure on organizations for conformity. In order to explore possible influences, the questions related to the perceived importance of the issues to the State, to the Russian society, to investors were asked. The influence of the context as well as of intra-organizational dynamics was also thought through questions related to motivations of companies for (not) undertaking measures related to climate change and (non-)disclosure this information publicly. It was also important to understand constituencies' views on how the practice can be changed, so the relevant discussion was raised. It was considered that this question would allow appreciating the role of the intra-organizational dynamics of Russian companies.

As was discussed in Chapter 4, the institutional and market context seem to be more concerned with the economic benefit. Furthermore, as was found in Chapter 5,

companies seem to try to find this “win-win” approach, where companies reduce their environmental impact as well as their operating costs and increase their profit. It was considered that questions discussed during the interviews would allow exploring the influence of different logics imposed upon companies by different institutions within Russian context and understanding the influence of intra-organizational dynamics on the climate change related practice.

Whilst the interview approach allows deeper understanding of the investigated issue, it does not represent statistically the Russian economy. It is widely acknowledged that interview approach is time consuming (O’Dwyer, 2004), this implication results in a limited number of interviews one can conduct. However, it was important to have exposure to different sectors, which was the reason why constituencies from different sectors were interviewed.

6.2.3 Data analysis

As was mentioned above, 15 interviews were conducted, primarily with managers, with three constituencies having direct relation to accounting. At the start of the interview, all interviewees were briefly introduced with the objectives of the interview. Nine interviews were digitally recorded for following transcription. Six interviewees did not agree for digital recording, but agreed for notes being taken. In this situation, interviews were conducted by intensive note-taking. The length of the interviews ranged from twenty minutes to an hour-and-half. The short interviews were the ones that were not arranged in advance but interviewees agreed to answer questions straight away. These two interviews were conducted over the phone. Eight other interviews were conducted through the Skype, as interviewees lived in quite remote distances from the interviewer’s location and the other 5 interviews were conducted in person. The interviews will be referred by a code number in the analysis.

Following general questions about the company and the interviewee’s role within the company, the dialog focused on respondents understanding of climate change issue, their attitudes towards the problem, their perception of the importance of the problem to Russian society, Russian companies and to the authorities. The interviewees were also asked about their views on companies’ motivations for (non-)activities related to

reduction of companies' impact on environment as well as companies' motivations to (non-) disclose information on GHG emissions.

These themes were informed by the literature review, content analysis of GHG emissions and climate change related disclosures, and the researcher's appreciation of the social, political, environmental and historic context of the country as well as regulations related to protection of the environment and climate change. For, instance policies related to climate change were quite weak and incoherent in Russia, which was discussed in Chapter 4, and historically, environmental issues were not priority in USSR, where economic development and plan achievement was more important. Moreover, Russian society has low awareness of climate change (Garbuzova and Madlener, 2012).

Interviews were conducted in Russian by the researcher who is a native Russian speaker. The researcher transcribed all interviews in Russian with subsequent translation into English. According to Seale (1999) the same researcher who conducted interviews should transcribe and translate them to reduce the possibility of losing the meaning (see Kamla, et al., 2012).

The analysis of the transcripts was guided by the recommendations of O'Dwyer (2004). The first step of the analysis process is to reduce data, which is achieved through identifying themes emerging from the evidence. The initial framework was formed from interview question guidance[17], however, during the analysis of interviews additional themes emerged. The evidence then was coded under the specific themes that emerged. Thus, this evidence was coded under numerous sub-themes, as O'Dwyer (2004) refers to them. O'Dwyer approached coding manually, however, in this research project it was considered appropriate to use computer assisted qualitative data analysis software (CAQDAS), in particular NVivo. The application of software does not mean that the analysis is carried out by the software, it is rather the tool designed to assist the analysis.

Application of NVivo allowed moving to a display stage easier, as it automatically summarises the themes/codes identified by the researcher into detailed matrices. Therefore, the researcher is able to identify cross case patterns and regularities in the interview data, which O'Dwyer (2003, 2004) achieved manually.

[17] The interview questions can be found in Appendix 6.

The following stage, as per O'Dwyer (2004) is data interpretation, suggesting that at this stage field notes, recording reflections, interview summaries, memos, and personal reflections should be studied and analysed in conjunction with the matrices. Which, according to Denzin (1994) helps then to formulate 'thick description' (see O'Dwyer, 2003), which then can be interpreted through analytical lens.

6.3 Interview analysis

6.3.1 Attitudes towards climate change issues

Part of the questions prepared for interviews were concerned the importance of climate change issues to interviewees, their perceptions about importance of those issues to the Russian society, to organisations operating in Russia, and to the State. This section presents analysis of those perceptions.

It seems that although few of the interviewees find climate change issues important, they did not appreciate the consequences of its change. In fact, many interviewees mentioned that they did not consider climate change issue as being critical at all.

> *"I do not see any direct threat [from climate change], so it is not affecting my motives and my behaviour"* (Interviewee 11).

The interviewees were rather concerned with the impact of temperature change on local climate and them personally. For example, Interviewee 1 answers on the question whether climate change is important for him:

> *"Of cause it is important. I feel that change in temperature. If it is cold – I do not like cold weather, and hot weather I do not like ether… I feel any climate changes because of my age".*

It seemed that most of the interviewees were not aware of what personal measures they can take in order to reduce their own impact on climate change. One of the interviewees also said that she is concerned about cataclysms happening around the world; however, it was interesting to learn her perception of her own abilities. Thus, she explains:

> *"I try to follow less to those issues now, because I cannot do anything about it"* (Interviewee 10).

When interviewees were asked about their perception of the importance of climate change issues to Russian society, most interviewees (14 out of 15) said that it is not a priority for Russian society with only a minority realising its importance. For example:

> *"Who is interested in environment in Russia? Only narrow group of people."* (Interviewee 1)

> *"No, I do not think that society is concerned about it [the environment]"* (Interviewee 13).

> *"It is important – this is for sure, however, only about 2% of population realise that"* (Interviewee, 11).

The reason of that low level of concern is that population in Russia is concerned with other issues than environment. Nearly all interviewees (14) agreed in this perception. Thus, the Interviewee 4, who is working with issues of energy efficiency, suggested that Russian society has to deal with "more serious" issues, which arise daily and affect the world more substantially, than the issues of climate change. This result is not very surprising, as the analysis of the Russian context demonstrated that Russian society was concerned more with social than environmental issues, as per 2004 WCIOM survey. Although, it may be concluded that in ten years the attitudes towards the environment, or actually towards other "more serious" issues did not change.

Interviewee 6 also said:

> *"These everyday problems are more important than problems of environmental security in the future"*.

In this statement, the key detail is that climate change issue is considered as environmental problem affecting "the future". In fact, most of the interviewees mentioned that Russian society is not thinking about long term issues. Interviewee 4 explained that people living in Russia have shorter time horizon, than have people living in developed countries. Therefore, people living in Russia, as well as he himself, do not see what is going to be in two years, while problem of climate change is related to even longer period. One of the interviewees mentioned that there is still plenty of time, minimum of 150 years. While the other interviewee defined Russians according to the wise saw:

"They won't lock the barn door till after the horse is stolen" (Interviewee, 8).

Furthermore, in addition to time, Russian territory's size and resources also affects Russian society's perceptions. For example:

> *"The specificities of the country should be understood. If Britain is only about 60 million on one small island then Russia is about 150 million on a huge territory. So, the effect is different, less obvious"* (Interviewee, 5).

> *"…This perception of space, infinity of resources – it plays particular role, affects the society. Therein is a certain problem"* (Interviewee, 15).

Thus, it seems that even though environmental problems might be considered important, they are not considered as a priority for Russian society, as long as the effect of climate change is perceived to be an issue related to the distant future. This perception by Russian society is very problematic.

Significant effect on interviewees' perceptions about climate change plays discrepancy among scientists about the reasons of global climate change. Thus, Interviewee 3 claimed that he as a science-savvy does not see any scientific proves of climate change problem. Some interviewees elaborate on different theories about the reasons for climate change, and note that they are sceptical that the main role in climate change is played by industries and in particular humankind. Indeed, as was discussed in Chapter 4 in the Russian scientific community, many scientists are sceptical about climate change negatively impacting on Russia overall (Garbuzova and Madlener, 2012). According to the authors, some scientists adopting quite controversial position suggest that Russia can benefit from climate change. These interviewees' perceptions of climate change can also be attributed to the political rhetoric. As a matter of fact, even Russia's Climate Change Doctrine lists climate change benefits, like decline in energy needed for heating and increased agricultural productivity (Henry and Sundstrom, 2012). Therefore, it is not surprising that interviewees believe that climate change issues are not a priority for the society.

The interviewees think that environmental and climate change related issues are important for the State. Thus, Interviewee 11 explains that the issues of climate change is important for the State as there is need to know what is happening as well as why it is happening. He explains that it is important for all countries. He suggested that the more

developed country the more it thinks about the future. He thinks that for the Russian government the issue of climate change is important because the state should think about different development strategies in different regions. Although interviewees believe that the issue is important for the State, they think it is not a priority. Thus:

> *"It is a serious, interesting, topical question, but unfortunately it is not a top-priority issue [for the State]"* (Interviewee 13).

> *"Although this topic has been raised, unfortunately we in Russia are more focused on how not to allow this programme on climate change to hit the possible economic growth"* (Interviewee 15).

Here, not surprising was the attitude of interviewees who knew what the Kyoto Protocol is. They all were taking about the State's position in this question, arguing that the Kyoto Protocol, at least the second phase, was not equal in relation to all countries. They emphasised that such big emitters as the USA and China did not sign the Protocol, therefore why should Russia do it. Thus, Interviewee 14 questions the reason for Russia to reduce its GHG emissions, if the country can absorb its own emissions by its forestry. While, according to him, America will continue to grow its industries putting the rest of the world into jeopardy. This way, he argues, Russia will lose its competitive advantage, which nobody is going to do. This rhetoric about the Kyoto Protocol is consistent with the rhetoric of Russian media, which was discussed by Tynkkynen (2010). Indeed, the media's translation of climate change issue from science to public language plays crucial role as suggested by Poberezhskaya (2015).

However, as was discussed in Chapter 4 modernisation of the economy through energy efficiency is important for the State. Thus, Interviewee 14 notes that there are still many companies in Russia that were built in 70-80s, where the owners are happy that they get the profit but do not want to modernise their operations. He also emphasised that the country has a problem in manufacturing industry, and noted that D. Medvedev, being at the time the President of Russia, said that if companies do not want to modernise easy way, then the country would modernise industries through ecology. Thus, according to the interviewee, the State is concerned with climate change and energy efficiency problems but he was concerned that because of the situation in political arena, at the time of the interview, measures taken by the State would be slightly delayed.

In relation to business attitudes towards climate change issues, interviewees perceive that commercial organisations are more concerned with other issues, such as profit, growth of sales, market share, while environmental issues are not considered as a priority at all. As Interviewee 7 said:

> *"I think that companies think about it last".*

This supports Kuznetsov and Kuznetsova's (2012) suggestion that managers in Russia did not regard CSR as a priority.

Interviewee 15 also notes that for their company the primary objective is to be effective company, which can also be achieved through reduction of risks associated with environment. He explained further that importance of climate change issues for companies depend on their 'maturity':

> *"Probably, the key here is different level of maturity of companies, and second thing is how extensively companies interact with international companies".*

When talking about energy efficiency Interviewee 12 also raised an issue of not modernised business facilities. He claimed that energy efficiency should be rational. He explained that if a plant was built 70 years ago using particular technologies and in order to reduce twice its emissions, company might need to modernise 70% of that plant. Even though company might reduce its emissions by 15%, but 70% of company's value would be too much. In fact, one of the reasons for high levels of carbon emissions and high energy consumption in Russia is age and inefficiency of the capital stock, as per (OECD, 2011). Interviewee 12 argued that because it is not always economically beneficial, it might be better to build new rather than modernise something old. This suggests that companies with restricted resources are not in a position to adopt new technologies to reduce their GHG emissions, even if those companies would want to improve their practice. As was discussed in Chapter 3, resources are important for companies in order to implement the change in practice.

Thus, it can be suggested it is not only 'maturity' of the company and company's resources that influences the decision to take measures to reduce environmental impact, but also the benefit for the company from those activities. There seem to be influence of different institutional logics upon organizations – to be economically profitable and to

reduce costs, but at the same time to reduce climate change impact and modernise technologies.

The following section discusses the reasons for companies' involvement in environmental and climate change related activities.

6.3.2 Motivations for environmental and climate change related activities

Companies are expected to comply with legislative environmental requirements, however, these requirements, as was mentioned in Chapter 4, are not directly related to the problem of climate change. In relation to climate change issue, interviewees do not see the State imposing the pressure on companies. For example, one of the interviewees, Interviewee 12, explained that for companies it is important to obey the pollutant emissions limits, as it is a compulsory requirement. On the other hand, non-compliance, according to the respondent, has financial implications as well as the risk of shutdown of operations. However, here it would be important to notice, that for authorities to shut down the company, the company has to fail regularly with the compliance with requirements of the FSSNR and only through the decision of the court the decision on shut down can be made, as was explained by Interviewee 14.

There are also other interviewees who mentioned that one of the reasons companies conduct environmental activities is the pressure from authorities. For example:

> *"For example, our company is looking to $50 million because it has to build purifying drainage filters. This is requirement of the FSSNR"* (Interviewee 11).

As a motive for environmental and climate change related activities, a couple of companies' representatives mentioned that partners could play an important role when company is making that decision. Campbell (2007, p. 962) suggests that companies are "more likely to act in a socially responsible way if they are engaged in an institutionalized dialog with unions, employees, community groups, investors, and other stakeholders". However, the small number of respondents, mentioning this as a motive, might suggest that partners should themselves have environmental policies in place, to influence the decisions. Indeed, if to consider perceived attitudes of the society and business in Russia it seems that partners, at least domestic, are unlikely to influence companies' behaviour. However, as Interviewee 15 mentioned "matured" companies that interact with international companies might, indeed have influence from their

international partners. Interviewee 6 also explained why their company, which is working with European company, is taking measures to reduce their climate change impact:

> *"This is a policy of the Italian company. They have common policy, which was developed in Rome, which suggests improvement of environmental situation onsite".*

These results are consistent with finding of qualitative content analysis, which found that companies that are interacting with international and domestic sectoral associations disclose information on climate change activities.

Some of the interviewees also mentioned "image of the company" as a reason for adoption of environmental measures. One of the interviewees explained that companies exposed to the public, such as companies in consumer goods and services or beverages, have to fight for customers. These companies engage in environmental activities, so they can attract loyal customers. For example, Interviewee 7 explains:

> *"Our company positions itself as socially active company – often have projects, all of those are in the public eye, essentially all of them are demonstrated to the public… Our company operates in a difficult competitive environment. We need to fight with competitors and any loyal customer is important. The loyalty can be achieved in different ways: some just like how our brand looks like, or some like that our company's representatives put on green T-shirts and cleaned the park for them. Like it? Then they might think: "I will go and buy their product, not somebody else's"… these projects are for the image".*

Although, it can be noted that it is not just image of the company that is important, it is profit the company can get through those "loyal customers", as well as legitimacy to operate. Here, however, it is important to note that interviewee were rather taking about environmental activities in general, in particular visible environmental activities. Interviewee 11 explains more specificly why some companies adopt environmental practice:

> *"It is rather for increasing the profit".*

These statements suggest that companies can be quite selective in what activities they are doing as well as the impact they want to achieve. As Interviewee 8 acknowledged:

> *"The cleaning up of the territory is a joke. You can disclose to the public that you are taking measures to clean up the allocated territory twice a year, but at the same time pollute three time more".*

In fact, the cleaning up of the territory is a common practice, which is required by authorities. This activity is conducted not only by private companies but also by public sector entities. Furthermore, organisations have been conducting those activities from the USSR period. This initiative, as was mentioned by interviewees 8 and 13, comes rather from the society. Here, it can be suggested that society's expectation influence the activities of organizations in this respect.

The most common motive for adopting environmental and climate change measures mentioned by interviewees was the benefit companies could obtain. Companies consider some environmental activities as measures to reduce their costs, e.g. on energy and fuel consumption, or recycle to eliminate costs on waste disposal. For example:

> *"In regard to energy efficiency, it definitely coincides with the company's interests to pay less for energy and electricity consumption. It is not new. All our [Russian] companies are trying to reduce their costs including energy and electricity expenses"* (Interviewee 8).

> *"Saved on fuel – saved in Roubles, so there are fewer emissions. Thus, you can kill two birds with one stone"* (Interviewee 7).

When asked one of the interviewees why their company recycles the cartons, the respondent explained:

> *"We do not have particular ethical reasons. We just do not know what to do with it, as we have only limited volume for waste disposal. This [recycling] is even beneficial for us. We do not get money for it, just may be odd money. On the other side, we do not have to pay more for waste disposal"* (Interviewee 10).

In relation to particular issue of energy efficiency, most interviewees relate it to the economy. Thus, Interviewee 12 mentioned that all companies have energy saving

programmes, which can include small or big measures. These measures, as per interviewee, are related to simple economy.

Spence (2007) also noted that UK managers mentioned direct financial benefits, as cost saving or energy efficiency. However, there was limited number of those managers, as most of them referred to more "soft" issues, as manging relationships and responding to social pressures.

However, as per some interviewees, voluntary environmental measures taken by organisations will also depend on the 'maturity' of the company. Thus, interviewee 11 explained:

> *"Look, companies very rarely get to that level of values where they start to think about environment… I always use the Maslow's hierarchy of needs – without closing the level of safety, it is impossible to think about the top level – about the environment".*

The 'maturity' level mentioned by some respondents was also mentioned by Larrinaga-González, et al. (2001) referring to it as the progress of the company. The authors found that more progressive organisations use actively disclosure of environmental information to form the boundaries of the environmental issues and the perception of corporate environmental practice by society.

Some interviewees explained that for "matured" companies it is important to follow acceptable norms in order to survive.

> *"Disregarding the norms by big companies is always obvious for society, which could be very vulnerable position"* (Interviewee 11).

Therefore, it might be suggested that companies operating in Russia, with contradictory logics in relation to climate change measures imposed upon them, voluntarily adopt measures to reduce their impact from quite pragmatic reasons. Those measures help organisations to improve their image, reduce their costs, and as a result increase their profit. This was also found in climate change related disclosures, where climate change activities were linked to cost saving. Institutional theory suggests that companies are faced with market capitalism in industrialized western societies, where the main legitimating characteristic is economic efficiency. By being seen as profitable,

efficiently managed company, Russian managers perceive that their company is also seen as legitimate. This is one of the logics imposed upon organizations. At the same time, international partners or sectoral associations seem to have impact on companies approach to climate change issue, which is another logic, imposed on organizations. These contradictory logic lead companies to seek "win-win" position where both expectations can be met. Furthermore, as was also discussed in this section, companies conduct some environmental activities visible to the Russian society, suggesting that this allows companies to be seen as legitimate by the society too. Referring to Dillard et al.'s (2004) explanations of institutional theory it can be suggested that Russian companies, which are seeking legitimacy, are motivated to adopt environmental and climate change related activities.

6.3.3 Barrier for environmental and climate change related activities

The main barrier for environmental and climate change related activities mentioned by most of the interviewees are financial implications of environmental projects. Luo et al. (2013) also explain that reporting is only a part of climate change mitigating activities. In fact, those activities involve a substantial investment and a long-term commitment.

One of the companies' representative explained that their company had a project for replacement of all emission filter until 2025, but because of the crises, this deadline had to be moved. The interviewer complained that there is no support from the State, in forms of any subsidies or investments, while those projects are very expensive financially. This supports the finding of the study by Kuznetsov and Kuznetsova (2012) that Russian managers see financial issues as the main constraint for CSR and believe that the legal system should provide more incentives.

The Interviewee 6 also explained that:

> *"Commercial organisations are not ready to spend money from their profit for the reduction of GHG emissions. We have those projects, and we try to implement them. However, without the State support those projects are not carried out to the final stage, instead, they are left at their early stage"* (Interviewee 6).

Interviewee 12 suggests that without economic benefit companies will not take measures to reduce their impact. The respondent questions the rationale for further

reductions of polluting emissions if companies are complying with the State requirements anyway.

Interviewee 9 states that because of financial constraints smaller companies are reluctant to invest in measures that would reduce their GHG emissions. The respondent acknowledges that the equipment is too expensive, so it is usually utilised as long as possible, without considering the impact on the environment. Spence (2007) also found that even though climate change issues were important for UK companies, the extent to which the issue were addressed was restrained by short-term commercial constrains. The finding in this study is consistent with Luo et al. (2013) finding that financial resources are more likely to be a constraining rather than driving factor in developing countries.

As was discussed in Chapter 3, the neo-institutional perspective suggests that in order to implement the change, it is not enough to have market or institutional pressure, but one of the aspects of intra-organizational dynamics is necessary, which is access to resources. This might be resources to human capital which provides knowledge, as well as financial resources, which would allow invest into the change. This suggestion can be supported by the evidence obtained among Russian managers and accountants. Indeed, companies with limited financial resources find that survival for the company is more important, as was mentioned by Interviewee 9, than environmental concerns. As well, as was mentioned above by Interviewee 11, until company closes its basic needs level it will not be able to consider its environmental impact. These results demonstrate that to implement environmental practice, companies need capacity for that change, such as financial resources.

6.3.4 Motivations for environmental and climate change disclosures

One of the reasons for companies to disclose environmental and climate change related information raised during interviews was the ‘maturity’ of the company. These companies see opportunities for further development through complying with particular business rules. These companies see disclosure of climate change related information as a common business practice, which they follow. Thus, Interviewee 5 claims:

> *If the company discloses its emissions, the company demonstrates that it follows business rules, reduces possibilities of unreasonable complaints, and this is positively accepted by the public.*

Surprisingly, Interviewee 2 was irritated with the question, saying that all the information about their company's GHG emissions is available through different media and there is nothing to add. The respondent claimed that it was obvious why their company was disclosing this information publicly, stating that it is generally accepted business practice, and the researcher should rather speak with those companies that do not follow the practice and find out why they do not do it.

However, according to interviewees 11 and 15, this business practice comes to realisation when companies achieve a particular level of development.

> *Maturity of the company is formed under the influence of particular concerned parties, e.g. shareholders, the Board of Directors, auditors, or even peer examples. For company to reach a certain level of maturity and culture, it is required to be on a particular level of economic development, as well as to have any exposure to international programmes (Interviewee 15).*

All those interviewees are from companies that can be considered as matured and having exposure to international business practices. In fact, the analysis of the GHG emissions disclosure practice of companies, which interviewees 2 and 15 represent, presented in previous chapter, revealed that their approaches to disclosure of GHG emissions were among the best within the sample.

Furthermore, Interviewee 15 mentioned that the company joined to the international industrial council[18], to develop further provided that they will follow generally accepted business rules. The interviewee also mentioned at the beginning of the interview that the council considers climate change issue important, so does their company. This supports Campbell's (2007, p. 960) proposition that "[c]orporations will be more likely to act in socially responsible ways if they belong to trade or employer associations, but only if these associations are organized in ways that promote socially responsible behaviour." The influence of collaboration with peer companies in relevant association was also noted in qualitative content analysis (Chapter 5).

[18] The full name of the council is not disclosed in the thesis, as it will be easy to reveal the identity of the interviewee, as this is the only Russian company in that council.

Institutional theory suggests that companies adopt particular accounting practices because of the isomorphic pressures to mimic peers or competitors in order to be seen legitimate. The results demonstrate clear influence of institutionally promoted logic of importance of climate change activities. It then can be suggested that Russian companies disclose GHG emissions and climate change related information to conform to industry or other institution's promoted template, as managers perceive it as generally accepted business practice. This was also found by Spence (2007) among large UK companies. Spence found that isomorphic pressures to mimic peers and competitors is one of the motivators for CSR and SER.

As was discussed above, one of the main reasons companies adopt environmental and climate change related measures is the image of the company. Here, significant role plays disclosure of environmental and climate change related information to external parties. Indeed, image is often mentioned by interviewees as an important reason for these disclosures. Thus, Interviewee 12 claims that it depends on how company wants to positions itself. The respondent explains that due to the specificities of the production process, emission of GHG is not a serious issue for their company. Nevertheless, according to the interviewee, their company discloses this information on their website as well as replies to the CDP questionnaire. The reason for this is to improve their image. This statement, however, should be treated carefully, the company might be disclosing information for the sake of image, but the industry, where the company operates, can hardly be considered as low GHG emitting.

Representative of another company was more specific:

> *In our case, we are observed, that is we are visible. That is why we have reverse principle: if we do not disclose, then we will be perceived worse. How did we start when I joined the company? I persuaded people that we need to disclose information, because the usual game, such as an "ostrich position", creates worse impression about the company. While if you disclose fairly, maybe it is not perfect sometimes, but through the disclosure you demonstrate that you know the road and you will be working on the excellence (Interviewee 15).*

This finding supports the suggestion made by Hrasky (2012) that for environmentally sensitive and for visible companies symbolic approach to legitimacy is not effective, suggesting disclosures are supported by real actions in relation to environmental issues.

Interviewee's discussion also points out that there is a need for someone in the company who is aware of the problem and who is dissatisfied with the template in use and prefer the change.

Furthermore, Interviewee 12 also mentioned that disclosures are not about what companies did wrong, but about the progress the company achieved, how much company was able to reduce, demonstrating that the company is working on the issue. This finding is consistent with earlier research into what kind of SEE disclosures investors consider useful, which found that investors want to ensure that management knows what is adequate and appropriate (Solomon and Solomon, 2006). The authors cite one of their interviewees:

> *"What we need to know is that the Board knows that what they are emitting is suitable, appropriate, or not over the top, or likely to be costing the company in terms of fines and things"* (Solomon and Solomon, 2006, p. 575).

It is, now not surprising that among disclosing Russian companies 86% disclose the amount of GHG emissions reduction achieved, as the results in Chapter 5 demonstrated. This is consistent with Luo and Tang (2014) who found that companies with a good carbon performance, especially if a company achieved a larger carbon reduction, tend to disclose more information on carbon emissions.

Furthermore, according to the Interviewee 12 these disclosures help to improve the relationship between companies and authorities, building trust and loyalty. Interviewee 15 also explains that companies are working with authorities and have built a particular reputation, and have a respectful relationship with each other. This statement was also supported by the interviewee from the public sector, who due the specificities of the job has to collaborate with companies on environmental issues. This finding is similar to Spence's (2007) suggestion that one of the companies' motivation for SER was to manage relationships. However, it is not suggested that Russian companies are trying to avoid regulations in this area as was suggested by Belal and Lubinin (2009), but it might be that companies' lobby and authorities are trying to find suitable solution, as often happens when the interests of the State and of companies differ, as was suggested by some interviewees. Thus, Interviewee 8 explains how authorities and companies are working in finding compromise when limits for polluting emissions are set up the way so the government's budget is fulfilled for dealing with environmental problems and at

the same time, the State would provide the possibility for the company to grow and conduct modernisation.

Three of the interviewees relate image to the goodwill of the company, suggesting that better image increases the capitalization of the company. For companies that are listed on international markets the compliance with market requirements or expectations of the market is also important. Interviewee 15 states:

> *"For us the main push to report on sustainability activities by applying GRI Guidelines was listing on the London Stock Exchange. Later, under the pressure of the Board of Directors we disclosed more and more. So then, it was more the requirement of the Board of Directors".*

Furthermore, those disclosures on international markets were aimed to attract international investors. According to Interviewee 4, if companies have international investors, then it is common for them to disclose information for those investors, western partners, and colleagues. Interviewee 10 also suggested that companies disclose climate change related information to demonstrate company's level of development.

> *"Companies disclose that kind of information to demonstrate… that the company is investing in the production and it cares about the future. And it is not only about the survival of the company* (Interviewee 10).

> *"Investment funds are interested in such information, and even hold meetings related to sustainability development"* (Interviewee 15).

Companies disclose measures that they took to increase their energy efficiency, which managers related to financial information. Interviewee 11 explains:

> *"Energy efficiency is the one of the criteria of company's efficiency, not from the environmental perspective but from the perspective of internal economic efficiency. The reason is that energy sources are purchased. We also have a target to increase energy efficiency: we installed energy saving lamps, motion sensors, etc., so we do not have excessive usage of resources".*

The interviewees relate environmental information, in particular environmental risks, to financial risks. Thus, Interviewee 1 claims that information related to climate change is

disclosed for international investors because there is a market, moreover, the interviewee considers international investors as risk-averse, stating:

> *"People abroad used to live without risks".*

Interviewee 15 explains in more detail how efficiency and risks are connected:

> *"We have a group of sustainability development. And everyone started to appreciate that it is not just a fad, but the system based on risks. Therefore, it is a useful thing. We tell straight away that we rest upon the economy. It is not about being cynical but it is about being objective. If the company is not objective, we will not be able to do anything. Therefore, first, we need to be effective company that can create profit for our shareholders. One of the ways in which it is achieved is through the reduction of risks and we do not allow our business being impacted in terms of environmental or health and safety issues. Therefore, we started to increase internal requirements for ourselves".*

This statement supports the suggestion of Meyer and Rowan (1977) that by incorporating institutionalised elements companies get "prudent, rational and legitimate accounts" of organizational activities, which then protect them from being questioned (see Dillard et al., 2004, p. 509).

Thus, as there are no requirements by the authorities or by the Russian stock market to disclose GHG emission or climate change related information, regulations in Russia cannot be considered as a motive for GHG emissions disclosures. Companies that engage with those activities do it on a 'voluntary' basis. However, as was mentioned in Chapter 4, FL No.261 requires companies to provide information on energy usage, state-funded organisations are also required to report to the State on reduction in their consumption of water, diesel, natural gas, coal, heating and electrical energy, which is often disclosed by companies publicly too. At the same time, along with the Board of Directors being important, there seems to be external influence (decisions for listing on the international stock exchange, influence of international investors, auditors, or peer examples) upon decisions to disclose climate change related information, the internal constraints might not facilitate the change in practice, as companies also need to be at a particular level of economic development.

6.3.5 Reasons for non-disclosure of climate-change related disclosures

One of the main reasons for non-disclosure of the information related to climate change among Russian companies is the absence of the audience and demand for this information. Here, they list absence of the interest of such information among NGOs, Russian society, and Russian stock market and as a result absence of any pressure from those groups upon organisations. The lack of demand was also mentioned by Solomon and Lewis (2002) as a possible reason for non-disclosures of environmental information, which is also consistent with Collison et al.'s (2003) finding that managers did not think that shareholders were interested in such information. These studies, however, were conducted more than ten years ago, while recent studies seem to find different views. As the literature review demonstrates Solomon and Solomon (2006), Sullivan and Gouldson (2012) studies have found that there is a demand for this information. Here, it seems that Russian companies, which belong to the developing economy, do not see any demand from Russian investors.

In respect to the question about the interest of Russian investors to the issues related to climate change and GHG emissions, the Interviewee 15 stated:

> *"No, they are not interested. It is more attributable to the West"*.

This is consistent with Kolk et al. (2008) findings, which found that some Russian companies submitted their reports to the CDP. However, when searching for CDP involved investors' origins the authors did not find any Russian investors interested in CDP reports at the time of the research. The findings in this study demonstrate that there was no change among Russian investors, as domestic investors still do not exert pressure upon Russian companies for GHG and climate change related disclosures.

The interviewee 5 and 12 explanations agree in that if companies are heavily polluting and cannot change their behaviour, due to financial constraints, for example, then there is no reason to disclose information because those disclosures cannot offer anything to the public, moreover, there is no regulation to do that. Bad news, on the other hand would disturb the society and there is no need to attract this type of attention. Interviewee 12, as was discussed above, also claimed that disclosures are used to demonstrate that the company is working on problems, that they are aware about issues and taking measures to reduce their impact. This information, the respondent argued,

increases the image of the company. On the other hand, disclosures of bad news can then adversely affect the image of the company. This finding is consistent with Luo and Tang (2014) who found that companies with good carbon performance, especially if company achieved larger carbon reductions, tend to disclose more information related to carbon emissions. The authors suggest that good performing companies tend to be more transparent to differentiate themselves from poor performers. Therefore, the results of qualitative content analysis, which showed that *Mechel* coal extracting company, although aware of climate change and GHG emissions issues, did not report on its own GHG emissions, at least through the media analysed, are not surprising.

Referring to Burns and Scapens (2000), it can be highlighted that it is indeed members of society, or members of business in this study, not always accept the same behaviour, institutionalisation of GHG reporting in Russia is different between different organisations and is not yet widely accepted. The results of interviews demonstrate that companies that have no exposure to Western business practice have no demand for climate change related information. This absence of demand within Russia is reflected in the limited number of companies, which actually disclose GHG emission information.

6.3.6 How to change the practice?

Most of the interviewees believe that it is unlikely that most Russian companies would take measures to reduce their environmental impact and GHG emissions on voluntary bases. They suggest that companies should have some incentives to embrace the change: whether they have to be regulated, or should be incentivised financially, for example through tax incentives. Some interviewees suggest that exploitation of resources should become more expensive, while others suggest that companies investing into modernisation should have some kind of financial incentives from the State. For example:

> *"The harder it hits companies' financials, the stronger incentive to do something in this direction. … This should be expensive for companies. …hope for voluntary approach is quite utopian"* (Interviewee 7).

> *"If to increase that financial component [rates], then people [management] will start to think. However, they [companies] need to be given some kind of*

allowances if they have those [environmental] projects, so they can implement those projects. However, there is no such support. You have to do it [modernisation] and that is it. Nobody is interested about how this activity will be funded and if the necessary resources are available. If there are substantial tax incentives then these projects could be and will be realised." (Interviewee 6).

Here, interviewees were talking not about fines for emitting GHG emissions, but rather about increasing rates for companies' impact on environment. However, there is discrepancy between some of the interviewees. Although some representatives claim that the current rates are small, other interviewees note that the rates are quite substantial for them. When considering the sectors to which those interviewees were related, it can be noted that companies that have bigger environmental impact, like companies from manufacturing or mining sectors, have more substantial environmental rates. Therefore, from perspectives of companies with less environmental impact, those costs seem to be quite small. It can be argued that increased rates will not be able to solve the issue, as money that could have been spent on modernising equipment would be spent on rates for polluting environment. Although, as was mentioned by Interviewee 8, the State has two objectives here, these are tax collection and preservation of the environment; both of those objectives are controversial. However, as was mentioned by Interviewee 14, the State is not interested in collecting money for cleaning the environment, as it can be even more expensive, but rather is interested in preventing those pollutions.

Many interviewees believe that the major roles in changing climate change related practice among companies should play the State, business itself and the society.

Thus, Interviewee 12 argued that companies should set environmental objectives for different length terms, like reduction of waste, energy and electricity usage. According to him, these measures are connected to the efficiency of production, which is also related to cleaner production.

Interviewees also claimed that attitudes and behaviour of the society towards the environment should also changes. They explain that the Ministry of Education should bring more exposure to environmental friendly behaviour in nurseries and in school education; however, this on its own will not be enough. They emphasise that behaviour

of parents influences children's behaviour, so parents themselves should be an environmentally friendly model for their children. Although, this would be a long process, but media could be of an effective help here. As was discussed in Chapter 4, media so far was not questioning the State's approach to the climate change issue; instead, it was delivering the State's point of view.

It should be noted that the role of the State in these issues was more emphasised. Mainly interviewees talked about the need for State's environmental programme. They noted that the programme should include such mechanisms as regulations, norms, limits, carbon allowances, requirement to use new available technologies when new production facilities are built, as well as the State itself should develop those new technologies, so companies can then apply them and not spend their resources on research and development. This perception of the role of the State is quite disturbing. In fact, there is a law, FL No.261 "On energy saving and improving energy efficiency". As was discussed in Chapter 4, the law requires companies to provide information on energy usage and requires of state-funded organisations reduction in their consumption of water, diesel, natural gas, coal, heating and electrical energy from 2009 levels by 3% a year for five years (Henry and Sundstrom, 2012). Voluntary measures, of the law, include provision of tax benefits and subsidies to encourage companies to invest in energy-saving technologies or production of energy-efficient products. Therefore there is a Law, however, the problem is that this law does not have immediate effect, because new energy efficient technologies will only be introduced in 2020-2022 (Garbuzova and Madlener, 2012). Indeed, the Interviewee 14 explained that it is a long process: the State is working on new available technologies, which will be gradually published. The benefit of introduction of those new technologies in companies would be nullification of environmental impact rates.

However, as per Interviewee 4, companies want to be sure in the future, they want to be sure that these environmental programmes are not periodic in nature, so companies can make plans for the future. Otherwise, the environmental programmes on modernisation in companies also become periodic in nature.

6.4 Chapter Summary

This Chapter discussed the design of the interview approach, which was informed by the approach utilized by O'Dwyer (2003, 2004). Semi-structural interviews were used

in order to appreciate companies' constituencies' perspective on climate change issues. The chapter was concerned with exploration of motives that encourage companies to take measures to reduce their environmental and GHGs impacts, barriers for undertaking those measures, reasons for (non-)disclosure of GHG emissions and climate change related information publicly, and the ways how the practice can be changed. The analysis of the previous studies, exploration of the Russian context, and results of the content analyses informed themes that have been explored. The chapter outlines the process of deriving questions from the results of context analysis and content analyses, reflecting on neo-institutional perspective.

The interview analysis demonstrates that although interviewees considered the climate change issue important, they did not realised what measures they can take on a personal level to reduce the impact. Most of interviewees do not think that climate change issue is important for Russian society, social issues are considered to be more important. This supports the findings of the context analysis, presented in Chapter 4. The results also demonstrate that although the issue is important for interviewees, and considered important for the State and Russian companies, it is acknowledged that it is not a priority. Instead, the reduction of operating costs and increase of profits considered important. This again demonstrates the influence of contradictory logics on organizations – increase shareholders' wealth and reduce the environmental impact.

There is also clear influence of a sector on climate change approach. The members of sectoral associations support the approach to climate change promoted by relevant associations. International investors influence companies' approach to climate change, as they require this information to be disclosed. These suggested that Russian companies have the influence from institutional and market contexts for conformity. Although, content analysis did not demonstrate a relationship between listing of the company on the international stock markets, interview results acknowledge the demand for this information on those markets. As was mentioned in Chapter 5, qualitative content analysis was iterative process, and the researcher returned to the interpretation of climate change disclosures in order to explore the linkage between climate change related disclosures and membership in sectoral associations, which was pointed out during interviews.

The interview results also demonstrate that financial resources restrict organizations in implementing the change. Financially restricted organizations remain concerned with

the profit in order to survive and ignore climate change issue, complying only with State regulations. On the other hand, those companies that take measures to reduce the impact on climate change and disclose this information publicly do so if they see a benefit of doing that. The interviews also demonstrate that there is a need for someone with power within the organization to implement the change, for example the Board of Directors. These findings demonstrate the influence of intra-organizational dynamics on companies' decision to undertake climate change related measures and disclose this information. As was discussed in Chapter 3, to implement the change there is need to be someone with the power as well as organization need to have capacity for change, including financial resources.

This chapter also explored how the practice can be changed. Interviewees mentioned that there is a need for the State's environmental programme. Interviewees elaborate on the necessity of State's support. This again supports the suggestion of neo-institutional perspective that companies need capacity for change: they need financial resources, as well as knowledge and access to new available technologies.

The following chapter presents discussion of all results through the lens of neo-institutional theory.

Chapter 7: Discussion

7.1 Introduction

As was discussed at the beginning in Chapter 3, the study employs institutional lens in order to understand the response of Russian companies to the internationally accepted need for GHG emissions reporting. According to Kolk et al. (2008), CDP played an important role in the process of "institutionalization" of carbon reporting, as according to the authors more companies started to address climate change issues, including companies from developing economies. Indeed, the quantitative content analysis demonstrated that there are some Russian companies (35%), which disclose this information publicly, while qualitative content analysis demonstrates that more companies disclose climate change related information. This chapter provides analysis of the empirical results through the neo-institutional perspective.

7.2 Discussion through the Neo-Institutional perspective

As was discussed in Chapter 3, this study adopts the neo-institutional perspective in order to analyse GHG emission and climate change related disclosures. The framework allows demonstrating the influence of institutional and market contexts as well as of intra-organizational dynamics upon organizations to change the established practice.

Thus, the framework considers institutional and market contexts as pressures influencing organisations. DiMaggio and Powell (1991) suggest that organisations adapt to contextual expectations of appropriate organisational forms to gain legitimacy and increase their survival probability (see Greenwood and Hinings, 1996). Institutional theory allows demonstrating that organisations respond not only to market pressures but also to institutional pressures, such as pressures from regulatory agencies, general social expectations and the actions of leading companies. These institutional systems are associated with different institutional logics, which might be contradictory.

Greenwood and Hinings (1996) explain that when analysing the change it is important to understand the structure of institutional context. As the structure of institutional context, the authors understand the extent of tight coupling and the extent of sectoral permeability.

The authors explain that different sectors usually have clear organizational templates that can be considered legitimate, such as the state, some kind of regulatory bodies, leading organisations. Tight coupling also relates to the existence of mechanisms for diffusion and monitoring of conforming to a particular set of expectations. As per Greenwood and Hinings (1996) there are variations in the degree of tight coupling across institutional sectors, which might provide inconsistent cues or signals leading to variations in practice. Indeed, companies operating in the Russian context have quite inconsistent signals from institutional context. Thus, the State requires information on polluting emissions, energy efficiency, but not on GHG emissions, even defensive rhetoric of the State in relation to unequal requirements under the second phase of the Kyoto Protocol is influencing views of some interviewees. In fact, as was found by Prado-Lorenzo et al. (2009) commitment to environmental protection of the country where the firm operates influences the disclosures. It can be added that it influences not only disclosure practice but also the attitudes of managers and accountants and activities undertaken by companies in relation to climate change. On the other hand, international markets and international community raised the issues related to climate change, and as was found during interviews, requires this information to be disclosed. This inconsistency in the context is reflected on the level of adoption of GHG emissions reporting practice among Russian companies, which is less than a half of the sample. This result is lower than what was found by Rankin et al. (2011) among Australian firms.

As was discussed in the analysis of results, controversial logics imposed by institutional and market context are also reflected in the approach to climate change. The analyses demonstrated that the State is concerned with economic development and to more or less extent with environmental protection, while market is concerned with profit and reduction of risks from possible environmental losses. This influences the approach to climate change approach among companies, who implement new technologies to reduce their operating costs and as a result increase their profit. It seems that companies try to find “win-win” approach to the problem. This is also supported by interview results, which suggest that companies undertake environmental measures when they see the benefit of doing that.

Furthermore, the mechanisms of diffusion across institutional fields also vary. Thus, per Greenwood and Hinings (1996) there are clear mechanisms in matured sectors, so

normative, coercive, and mimetic pressures are high there. While, in less developed sectors the existence of leading organisations is less clear, so there is no stipulated template for organising, thus less pressure for conformity. Indeed, there is clear difference in GHG emissions disclosure between different sectors in Russia. As the results demonstrate, GHG emission disclosures in Russia were mainly made by companies from energy intensive industries, the ones that are expected to disclose this kind of information: Oil and Gas, Metals and Mining, Electric Utilities, and Chemicals, consistent with Ieng Chu et al. (2013) and Rankin et al. (2011). Indeed, interviewees mentioned that it is acceptable business practice to report this information. This can also be supported by the statement made by Interviewee 15, who said that their company joined to the international industrial council, so the company can learn and develop further their knowledge and practice in reduction of GHG emissions. The interviewee also mentioned that the council considers climate change issue important, so does their company. Thus, it might be suggested that this council promotes a legitimate template, which is adopted by companies that joined the council. Furthermore, the qualitative content analysis also demonstrated a clear difference in approach to climate change related disclosures. Although less emission intensive companies do not disclose GHG emission information, they discuss climate change issue and their approach to reduce the impact, which is quite similar within any particular sector. The interpretive textual analysis demonstrates that companies that are aware of climate change issue and take measures to reduce their impact belong to sectoral associations, supporting Greenwood and Hinings' suggestions that the legitimate template is diffused by the field.

Furthermore, companies from emission intensive industries disclosing GHG emission information are also influenced by CDP. As was discussed, that organisation promotes GHG emissions disclosures and provides the template, in the form of a CDP questionnaire, which companies can respond to, while investors have the possibility to take those reports into account. Indeed, the results of the quantitative content analysis demonstrate that companies that respond to CDP are more likely to provide GHG emissions disclosures.

As was mentioned, sectoral permeability is also important in institutional context. Permeability refers to openness and exposure to ideas from other institutional arenas (Greenwood and Hinings, 1996). This might be a reason why some sectors in Russia do not engage in GHG disclosures. It seems that non-reporting sectors do not consider

themselves as having substantial effect on climate change. However, the exposure to other institutional arenas influence their decision to report on climate change, which was demonstrated by the qualitative content analysis. However, as was mention above, these disclosures seem to be made by companies that are aware of climate change issue and have an exposure to international arenas, through sectoral associations (as was found through interviews and qualitative content analysis) or collaborate with international institutional investors (as was found in interviews). Moreover, absence of exposure to issues raised on the international arena, as was mentioned by Interviewee 15, might also influence why some companies do not take measures to reduce their GHG emissions. The qualitative content analysis also shows that companies collaborate on climate change issues not only with organisations from the same sector but also with companies from other sectors. For example, as was discussed in Chapter 5, chemical producing company was purchasing associated petroleum gas from an oil and gas company in order to reduce GHG emission in general. The other example is the assessment of environmental performance of the company before lending it money by banking industry. These examples also demonstrate the influence of exposure to other institutional arenas.

Here, it would be reasonable to expect the involvement of NGOs in raising awareness in society and among organisations about processes of GHG emissions' formation, the impact of the global climate change and how emissions can be reduced would be beneficial. After all, one of the reasons of high energy intensity in Russia, and as a result of carbon emissions, is low level of awareness of potential impacts of climate change in Russian society (OECD, 2011). It is suggested, here, that to change corporate and social behaviour, the awareness of climate change issues in the society should be increased. However, a problem is the weakness of NGOs in Russia, as NGOs are seeking support from companies and the State in order to survive. It could be suggested that although the government has a big influence on the NGOs it still should be open to structural criticism and collaborate more with NGOs, in order to achieve common goal – to increase energy efficiency, reduce GHG emissions and prevent negative environmental impacts.

The State pressure in relation to polluting emissions and measures for their reduction is also evident across industrial sectors. Even though this information is required for disclosure by all Russian companies through FSSNR and FSSS, it can be suggested that

pollution-intensive sectors are under more pressure, so disclose this information through other media too. Indeed, as Interviewee 12 from emission intensive company explained that for companies it is important to obey the pollutant emissions limits, as it is a compulsory requirement. Companies are very serious in relation to pollutant emissions limits, as consistent non-compliance might lead to financial implications as well as the risk of shutdown of operations.

On the other hand, there is scarce government action in relation to GHG emission disclosure, which, per Cooper and Pearce (2011) is required to reduce the reliance on carbon based energy sources, while "[t]he lack of government policy allows industry and corporate lobbying of governments to protect resource access" (Rankin et al., 2011, p. 1043), which might be the case in Russia. These suggestions are also consistent with Prado-Lorenzo et al. (2009), who found that the commitment to environmental protection of the country where the firm operates influences their disclosures. In fact, even the President's Decree on "GHG emissions reduction", which has less power than a law, seems to have influenced to some extent GHG emission disclosure. Thus, as quantitative content analysis demonstrated, 86% of disclosing companies in the sample report on the amount of GHG emissions reduction achieved.

On the other hand, Russian companies seem to get similar signals from the market and institutional context in relation to such issues as energy efficiency, energy consumed/saved, and investments into new technologies. As was discussed in Chapter 4 those issues are important for the State. It can also be argued that those issues are related to economic efficiency as they reduce costs, which is important in capitalist world. Dillard et al. (2004) argues that companies to be viewed legitimate participants have to be economically efficient as organisations in industrialized western societies face with market capitalism. As a result, this information was more detailed then the information on GHG emissions alone, as the content analysis demonstrated. This suggests that similar cues sent by the market and the institutional contexts are considered consistent and important, so disclosures in these areas are being adopted.

However, according to Greenwood and Hinings (1996) the change also varies within sectors, which have the same market and institutional pressure, because organisations vary in their internal organisational dynamics. Indeed, the descriptive results demonstrate that disclosures of GHG emissions vary among companies within one sector, where one company might ignore GHG emission information, while the other

one makes detailed disclosures on their GHG emissions. The difference in approach to climate change related measures and disclosures can also be seen through qualitative content analysis, where one company might consider climate change as a risk, another as opportunity and another ignore it completely. The importance of internal dynamics is also evident from interview results. Greenwood and Hinings (1996) stress that the internal complexity of organisations, or intra-organisational dynamics, should be considered seriously.

Thus, the framework differentiates between precipitating and enabling dynamics within intra-organisational dynamics. "Interest dissatisfaction" and "value commitment" are central in precipitating dynamics. According to Greenwood and Hinings (1996), a high level of interest dissatisfaction of any group becomes a pressure for change. However, dissatisfaction does not provide a direct change. The dissatisfied group needs an alternative template to recognise their disadvantage position. Here, the authors suggest that the pattern of value commitment within organisation is important. The authors identify four generic patterns to the template in use: status quo, indifferent, competitive and reformative. Authors state that the radical change will only occur when there is competitive or reformative pattern of value commitment. As was discussed earlier, there are various alternative templates available for companies, which want to report not only on financial results but also on environmental and social issues, such as GRI guidelines and CDP reports. Indeed, some Russian companies apply GRI guidelines (39%) and some report to CDP (18%). Furthermore, less intensive companies adopt templates diffused within their sectors and report climate change related information through SERs or ARs, as qualitative content analysis demonstrates. As Greenwood and Hinings (1996) suggest, market and institutional contexts interact with interests and value commitments to create pressure for change. Based on attitudes of interviewees towards climate change issues it can be suggested that the pattern of value commitment is not reformative towards template in use. However, the fact that some companies actually report GHG emission and climate change issues could suggest that not all groups support the template in use and prefer some changes, suggesting competitive commitment within Russian organisations. Indeed, as Interviewee 15 explained how their company started disclosures of GHG emissions:

> *"How did we start when I joined the company? I persuaded people that we need to disclose information…"*

Thus, there were those who supported and those who opposed the change, suggesting competitive pattern of value commitment, at least within that particular company.

As per Greenwood and Hinings (1996), radical change will occur with supportive "power dependencies" and appropriate "capacity for change", which are enablers of change. The authors explain that different groups within organisation have different power, which allows those groups to constitute and recreate organisational structures, as they prefer. Thus, in competitive pattern of commitment change would occur only if those with power would be in favour of that change. The authors state that market and institutional pressure can shift those in power in favour of groups that prefer an alternative template to the existing one. However, this would happen only if powerful group recognises the benefits of a new template, is aware of potential alternatives and if there is a competitive or reformative commitment. Based on the content analysis results obtained in this research study it can be suggested that reporting Russian companies are aware of alternative reporting practice and have a competitive pattern of commitment within organisations. Both content analysis and interviews also demonstrate that companies implement the change when they recognize the benefit this change will bring. Interview results also support the suggestion that the decision on whether to take measures on climate change related issues and report this information publicly is taken by powerful group within the company. Thus:

> *"Later, under the pressure of the Board of Directors we disclosed more and more. So then, it was more the requirement of the Board of Directors"* (Interviewee 15).

Interviewee 12 also mentioned this. He explained that the idea of reporting GHG emissions was acknowledged by their department to Safety and Social Responsibility Committee of the Board of Directors, who then made a decision that the company should adopt the new practice, taking into account the benefits from those types of disclosures to the company.

However, there is also a need for capacity for change in an organisation. Capacity for change is the ability to manage the process of change from one template (practice) to another. This suggests that organisations need to have sufficient understanding of the objective, the skills and competencies to operate within that new template, and an ability to manage how to get to that new destination. The change will not occur without

the capacity for change, or on its own, as it has to be combined with either competitive or reformative pattern of commitment. Indeed, the results demonstrated the size effect, where larger firms tend to disclose GHG emissions information. This can suggest that larger companies have more resources, in terms of finance and human capital in order to understand the purpose of the new practice and how to implement that new practice. This notion of capacity for change was also evident in interviews. As was discussed by some interviewees the 'maturity' of the company suggests that company reached:

> "*…a certain level of maturity and culture, it is required to be on a particular level of economic development, as well as to have any exposure to international programmes"* (Interviewee 15).

This is different with perceptions of smaller business, where the survival is more important, according to Interviewee 9, so they are not concerned with environmental issues. Indeed, as a barrier for environmental activities most of the interviewees mentioned financial constraints. Furthermore, as was discussed by most of the interviewees, companies need support of the State, in terms of financial incentives and new technologies, which could readily be applied in organisations.

Even though, the quantitative results did not demonstrate the relationship between GHG emission disclosures and listing of the company on international markets, the qualitative content analysis demonstrates that climate change related disclosures were mainly made by companies belonging to international associations, suggesting that companies have exposure to international practices, where they learn new practices. Inconsistent signals from the State, domestic and international stock markets, from international peers have an impact on capacity for change, which according to Greenwood and Hinings (1996) is shaped by the market and the institutional contexts. So having inconsistent pressures slows down most of Russian companies in their almost experimental steps. Only large companies from emission intensive sectors feel more pressure, and as a result tend to adopt new practice and measure and report their GHG emissions. Although these large companies still learn this new practice, as was also mentioned by Interviewee 15 and as can be seen from the quality of GHG emissions disclosures. Here, seems that international expectations and peers performance (institutional context) within those sectors have greater impact on Russian companies so far.

7.3 Chapter Summary

The analysis of the GHG emissions and climate change related disclosures demonstrated that it is important to analyse the change (adoption of a new practice) in organisational context. However, not least important are intra-organisational dynamics. So far, the adoption of GHG emission disclosure practice is at the early stage in Russia. To have change in practice across all Russian companies there is a need for consistent signals from the regulatory bodies, local institutional investors, NGOs, society, companies' peers for a need for GHG emission disclosures. There is also the need for a close relationship between regulators and standard-setters, so standards are consistent with regulations, as was suggested by Kuasirikun (2005) and Lovell et al., (2013).

However, it is also important to consider intra-organisational dynamics. If there was consistent pressure from market and institutional context on those who have the power within a competitive pattern of commitment, having available new templates, the enabler that would allow for more rapid change is the capacity for action. Here possible limitation for Russian companies could be lack of financial, technological and human resources. Therefore, companies might need to be incentivised in order to enhance their capacity for action.

While it is suggested that more involvement is needed at the State level, there remains a need for international collaboration. According to Boston and Lempp (2011), individual countries find it difficult to make political decisions on carbon emissions because of the spatial dimension of the problem. They explain that drivers and consequences of global warming are understood internationally, so there is a need for collective international action to effectively mitigate the problem.

Chapter 8: Overview of the Thesis

8.1 Introduction

The primary objective of the study was to examine climate change and GHG emissions reporting practice among Russian companies as well as to get insights into the perceptions of different companies' constituencies, such as managers and accountants, towards global climate change concerns. It was also important to understand Russian companies' motivations for taking measures to reduce environmental and climate change impact, as well as barriers to those activities. The study also sought the reasons for (non-)disclosure of climate change related information. The assessment of GHG emissions and climate change related disclosures was facilitated by examination of range of media utilized by listed firms for disclosing company related information. Informed by results of content analyses, this study sought the views of managers and accounting related professionals towards climate change issues, in order to better understand the concerns associated with related activities. The analysis of those approaches was informed by the specifics of the global, and social, historical, and political context of Russia in relation to climate change problem.

The philosophical assumptions of the researcher directed towards usage of more qualitative methods of investigation, although allowing application of quantitative methods. Here, quantitative methods provided "skeletal" picture of the reality, while qualitative data provided empirical detail to make the picture meaningful. Thus, the study utilized four main methods: (1) context analysis with focus on scientific concerns, environmental situation in Russia, society's perception of importance of environmental issues in general, historical attitudes towards environmental issues, and political approach in mitigating climate change issues; (2) quantitative content analysis of a range of media, exactly 196; (3) qualitative content analysis focused on 71 media; (4) interviewees with managers and accounting related professionals. Thus, as this was the first study examining climate change related practice in Russia, it was important to draw more general picture, therefore all companies from all Sectoral Indices of the "MICEX-RTS" were included in the quantitative content analysis. On the other hand, in order to examine in depth what other issues related to climate change are discussed by the companies and how they are constructed, this study conducted qualitative content analysis, which due to specificities of the approach, were focused on a smaller sample,

which still covered all sectors of Sectoral Indices. Interviews allowed appreciation of the views of managers and accountants, making quantitative data meaningful. The study was underpinned by institutional theory, although no attempt was made to test the theory. The particular neo-institutional approach in explaining the change in climate change related practice was employed.

The reminder of the Chapter is organised as follows. Section 8.2 provides a summary of three empirical chapters: (1) overview of the Russian context conducted in Chapter 4; (2) overview of the qualitative and quantitative content analyses, conducted in Chapter 5; (3) the views of managers and accounting related professionals towards issues related climate change, presented in Chapter 6. The main findings through neo-institutional theory are presented in Section 8.3. Section 8.4 outlines limitations of the study and section 8.5 suggests areas for future research.

8.2 Summary of empirical chapters

Increased concentrations of GHGs emissions in the atmosphere trap the heat around the Earth, which leads to increased average temperature. In turn, the increase of the world's temperature for 4-5°C on average would involve radical and dangerous changes for the whole planet, such as loss of whole ecosystems, floods, storms, and draughts. Although, there is an agreement among most of the scientists that global warming is dangerous for the planet and is resulting from activities of human beings, it seems that there is still no universal international agreement on what measures should be adopted to reduce the growth of GHG emissions. Among international agreements on the states levels is the Kyoto Protocol, although it was not ratified by all countries. Especially the concern was that such big emitters as the USA and China did not sign the Protocol. This provoke debates among some countries, including Russia, claiming that the rights for economic development of Protocol ratified countries are prejudiced, while non-ratified continue to exploit the atmosphere, so they can continue to grow.

Russia, being an energy and carbon intensive country is third in the world in this respect to the volume of GHG emissions after the USA and China. Although, Russia's GHG emissions decreased from 1990' levels, the environmental performance remained poor. According to OECD (2011), World Bank (2008) and RusHydroMet (2014), the largest reason of GHG emissions in Russia is its energy consumption. The problem is that energy is wasted because of low energy efficiency and of depreciation of technical

equipment in Russian companies. In fact, Russia' emissions during the Soviet Union were even bigger because of the importance of economic development and the objective to achieve production plans. After the collapse of the soviet regime, the situation did not change much. Companies, previously owned by the State, concerned with their survival, were reducing their social as well as environmental costs. This, in turn affected society's attitude towards importance of social rather than environmental issues. During first phase of the Kyoto Protocol, which Russia ratified, the State introduced some policies related to reduction of GHG emissions. However, Russia was quite slow in developing policies that could facilitate participation in the agreement's flexible mechanisms. Later the State announced that was not able to take advantage of those mechanisms, which could have brought huge profits from selling carbon quotas. The most notable policy that was issued at the time is the Law "On energy saving and improving energy efficiency" which was based on the Climate Doctrine. The objective of the law was to modernise Russian economy by increasing energy efficiency. Law requires companies to provide information on energy usage; it also requires state-funded organisations to reduce their consumption of water, diesel, natural gas, coal, heating and electrical energy. Voluntary measures include provision of tax benefits and subsidies to encourage companies to invest in energy-saving technologies or production of energy-efficient products. Companies around the world are also encouraged by international NGOs to report their climate change impact through, for example, GRI guidelines or CDP Reports.

Chapter 5 is explaining the application of content analyses and present the results obtained by quantitative and qualitative versions of this approach. This study focused on disclosures made by "MICEX-RTS" listed companies. Different media of all companies from all Sectoral Indices of the stock exchange (of 80 companies) were benchmarked against the requirements of the GRI guidelines in relation to climate change related emissions. Quantitative content analysis demonstrated that only 35% of listed Russian companies disclosed information on their GHG emissions. Companies mainly from Metals and Mining, Electric Utilities, Oil and Gas, Chemicals sectors disclosed GHG emission information, although there are still differences in the level of disclosures between companies belonging to the same sector. Sustainability Reports were mainly used for this type of disclosures. Companies mainly disclose information on the amount of GHG emissions reduction achieved (86%). The regression results suggest that large companies and companies from emission intensive industries tend to disclose GHG

emission information. The results also suggest that companies disclosing to CDP and those that apply GRI guidelines tend to make disclosures related to GHG emissions. Results also indicate that the higher the expectancy of GHG reporting, given the sector where the company belongs, the more likely that the company from that sector will disclose GHG emissions information. The analysis did not find any relationship between companies' international listing and disclosure of GHG information. In relation to the amount of disclosures the analysis demonstrated that total disclosures are correlated with company decisions to report to the CDP, as well as the size of the company, with larger companies disclosing more GHG emission information.

Qualitative content analysis was conducted on different media provided by 27 companies, these were 3 companies from each sector of the Sectoral Indices of the MICEX-RTS. The results of the analysis demonstrate that companies from Electrical Utilities, Oil and Gas, Industrial, Financials, Telecoms, Metals and Mining, and Chemicals disclosed information required by the State for compliance. Thus, all companies in the sample disclose information on the consumption and reduction of fuel and energy usage, associated costs and savings, and on energy efficiency, many companies referring to the federal law. As required by law, most of the companies also disclose polluting emissions to the FSSNR and the FSSS, also displaying detailed information in annual reports, sustainability reports or on websites, for example: emitted particles, precise reductions and reduction measures taken, and associated costs. Less GHG emitting companies, even though do not disclose GHG emission information, as quantitative content analysis demonstrated, elaborate in their reports on measure they are taking to reduce their impact on climate change, listing such measures as improvements in energy usage, paper consumption (more electronic document transactions), lighting and air conditioning systems and office equipment. Qualitative content analysis demonstrates that climate change reporting companies belong to international as well as to domestic sectoral associations. The analysis also demonstrate that companies try to find such approach to climate change that would be beneficial to the company, for example, would reduce company's operating costs.

Chapter 6 examines the perspectives of different constituencies, in particular, managers and accounting related professionals, on measures taken by companies to reduce their environmental impact, barriers for undertaking those measures, reasons for (non-)disclosure of GHG emissions and climate change related information publicly, ways

how the practice can be changed. In order to appreciate the views of those constituencies were conducted 15 semi-structured interviews. The analysis demonstrated that most of the interviewees did not consider global climate change issue important and critical. Most of them think that there is still plenty of time before any substantial changes will occur. Furthermore, most of the interviewees do not realise what personal measures they can take to reduce their own impact. They also believed that for the Russian society the issue of climate change, and even environmental issues in general, is not priority. Interviewees believe that Russian society's perceptions about having huge territory and many years before the consequences of climate change influence people's behaviour and their attitude towards climate change. Interviewees suggest that climate change and environmental issues in general are important for the State and for companies, although these issues are not priority for them either. As main motivating reasons for companies to engage with environmental issues are requirements of the State, for example through such body as the FSSNR. The most common motive to conduct environmental activities is the benefit companies can obtain, whether through reduced costs, improved image, which leads to increased profits. Companies, however, quite selective in measures they are taking. Here, according to interviewees 'maturity' of the company plays an important role. Regarding the barrier to climate change activities, interviewees stress financial implication, as environmental projects are expensive companies are quite reluctant to spend their profit on these projects. According to interviewees, companies disclose GHG emission information because it is generally accepted business practice, so companies follow it. However, only those companies disclose GHG and climate change related information, which were able to achieve something and they have what to demonstrate. Otherwise, disclosures attract negative attention. Contradictory to quantitative content analysis, the interview results suggest influence of the international listing on the decision to voluntarily disclose GHG emission information. As one of interviewees explained, the main push for publishing climate change related information for their company was listing on the LSE. In order to change companies' behaviour, interviewees suggest that it can only be done through the regulation or through financial incentives, suggesting a role for the State.

8.3 Main findings

The analysis of empirical findings are analysed through neo-institutional framework, which provides a model of change that links organisational context and intra-

organisational dynamics of the company. Indeed, the range of empirical data utilized in this study allows to highlight the context and to appreciate intra-organisational dynamics.

Companies operating in the Russian context get quite inconsistent signals from institutional context. Thus, the State requires information on polluting emissions, energy efficiency, but not on GHG emissions, even defensive rhetoric of the State in relation to unequal requirements under the second phase of the Kyoto Protocol is affecting views of some interviewees. On the other hand, international markets and international community raise the issues of climate change. This inconsistency in the context is reflected on the level of adoption of GHG emissions reporting practice among Russian companies, which is comprise of only 35%. According to Greenwood and Hinings (1996) frameworks, matured sectors have stipulated template for organising, thus have more pressure for conformity. Indeed, the results demonstrate different levels of GHG emissions disclosures, as quantitative results demonstrated and difference in approach to climate change measures across sectors as interpretive textual analysis shows.

On the contrary, Russian companies seem to get similar signals from market and institutional context in relation to such issues as energy efficiency, energy consumed/saved, and investments into new technologies. As was discussed those issues are important for the State. These issues are also associated with costs, therefore important to investors. Indeed, as results demonstrate, this information was more detailed then the information on GHG emissions alone. This suggests that similar signals sent by the market and the institutional contexts are considered consistent and important, so disclosures in these areas are being adopted.

In relation to GHG emission disclosure, the results demonstrate the difference between companies reporting in the same sector. These differences can be explained by intra-organisational dynamics. For change to occur there is a need for competitive and reformative pattern of change. Here it is argued that there is a competitive pattern of change, as the results show there are companies that report information on GHG emissions and climate change, while there are some companies that oppose that change. Furthermore, for change to take a place there is need for availability of an alternative template, which could be readily applied. In relation to climate change disclosures, companies have a choice of at least two templates, GRI and CDP. Indeed, Russian companies applying those guidelines are more likely to disclose GHG emission

information publicly. Furthermore, companies that disclose climate change related information use SRs or environmental sections in ARs to disclosure information on climate change activities. However, this is not enough for changing the practice. There is a need for capacity for change. There is a need for someone in power to agree that this change will be beneficial for the company. In fact, as interviewees mentioned these decisions are taken by the Board of Directors. Capacity for change suggests that the company has sufficient understanding of the objective, the skills and competencies to operate within that new template, and ability to manage how to implement that new practice. The results of quantitative content analysis and interviews support this suggestion. As was found it is larger firms that disclose GHG information, suggesting that larger firms have more available financial and human resources. Interviewees also mentioned that 'maturity' of the company plays important role here, as well as financial resources.

8.4 Limitations

As was discussed in Chapter 3 there are various approaches to empirical research and all of them have different biases and assumptions. However, according to Laughlin (1995) the choice on theoretical and methodological assumptions enables the researcher to be clear about biases in a specific approach. Researcher's 'balanced' thinking informed the methodological approach to this research study. Here, qualitative and quantitative approaches were utilized. Although some researcher differentiate what methods can one utilize based on their ontological and methodological assumptions, the researcher believes that limitations of one method could be at least partially be overcome by the benefits of the other. It is rather more important to interpret the results within the particular ontological and epistemological assumptions that are adopted.

Thus, this study analyses the international, social, historical, political context in Russia. The analysis covers slightly USSR period, early 1990 and more recent time, up to 2014. The limitation here is that there might be more recent developments in policies, which were not captured. Focus on the Russian context also suggests that the findings in this study might not be applicable in other countries, in particular in developed countries where the issues of climate change have more attention.

Both versions of content analysis are subjective in nature. Although quantitative content analysis involves statistical analysis, the data for the analysis is drawn manually from

analysed media. Here, to reduce the bias, the researcher first learnt what GHGs are, to be able differentiate them from polluting emissions, for example. Then the GRI guidelines were used in order to draw the framework. The coding itself was straightforward. Furthermore, it is likely that firms included in the sample, not necessarily reflect the practice across the whole country. Qualitative content analysis is more subjective in nature and was concerned with how the climate change disclosures are constructed. Here, the text is interpreted by the researcher. Therefore, there is a possibility that somebody else could interpret the same text differently. In qualitative reading categorisation of the text is very useful, as it promotes consistency in analysis, so the coding frame was utilized. The coding frame was drawn from the requirements of the State and the Russian context. Furthermore, qualitative approach suggests smaller sample, due to the time it consumes. The firms included in the sample for qualitative content analysis not necessarily represent what measures taken by other Russian companies to reduce their climate change impact. The findings of both versions of content analysis relate to a sample of large Russian companies, so caution should be exercised in interpreting the results in different contexts.

This study also conducts interviews of different constituencies, which is quite subjective approach. First, the views aired are only interpretations of those individuals, and second, interview analysis involves interpretations of the researcher of what was meant. To an extent, the data collected is unique related to the specific context, suggesting that generalizations are not possible. In fact, it was not the objective of the study to provide generalizations, it was rather important to gain insights. The usage of interview method in this study helps to appreciate the views and perspectives of those constituencies being informed by the results of context analysis and content analyses. These methods altogether help to understand climate change and GHG emissions reporting in Russia: practice and perceptions. The critical orientation of the study, informed by those results, suggests ways forward. These are discussed in the following section.

8.5 Future research

The results demonstrate that there is a need for international collaboration in relation to measures taken to reduce GHG emissions. As was discussed attempts of single countries will not be enough to keep the average temperature of the planet within acceptable limits. The recent summit of UNFCCC in Paris (2015) sets hopes for shifts in arrangements. On the opening day, leaders of 196 countries were announcing serious

intentions towards reduction of GHG emissions. These then were discussed by ministers of those countries reaching the compromise by the end of the summit. However, being a compromise, the new document is not perfect, as not all of the agreements are strictly regulated (Harvey, 2015). The potential future research might be concerned with the political side of the issue and explore the views of policy-makers about the issue within a particular context.

The interview results pointed out to the need for a clear long-term programme on climate change, which would not only concentrate on large companies, but also on medium and small firms. The research could explore how to influence the approach to climate change of medium and small companies in Russia.

The analysis pointed that State programmes on environmental protection are not always properly delivered. It seems that even though there are some policies aimed implicitly at reduction of GHG emissions, and the benefits of those programmes, it seems that not all companies are aware about them. Solomon and Lewis (2002) suggested that a dual approach of legislation and the education of managers should be used. The future research could explore the process of diffusion this programmes across Russian firms.

It is also important to raise awareness about environmental and in particular climate change issues in the Russian society. As was mentioned earlier, consumption in Russia after the collapse of the USSR increased. The results suggest that people in Russia are not aware of what measures they themselves can take to reduce carbon footprint. Even, media accepts State's approach without questioning its rationale. The future research could explore the views of Ministry of Education to the problem of climate change and explore how the issue is delivered across educational institutions from school to Universities.

The future research might also utilize case study approach to explore the influence of the organizational context and intra-organizational dynamics on a sample of several companies within one sector. The analysis could cover the period from 2001, when the US withdrew from the Protocol, until 2015. The period until 2015 would allow covering 3 years after Russia completed the first phase of the Protocol (in 2012) and the announcement that the country will not take part in the second phase was made. As qualitative content analysis demonstrated, some companies mentioned that as Russia was not taking part in the second phase of the Protocol they lost money. Taking into

account that financial resources play a significant role for implementing the change, leaving of the Protocol might mean that even those companies that conducted climate change related activities would have to stop doing that. This could be further explored.

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Appendix A

No.	Company
1	Gazprom
2	RosNeft
3	Novatek
4	Lukoil
5	Bashneft
6	Tatneft
7	Transneft
8	Slavneft
9	SurgutNG
10	FGC UES (FSK EES)
11	Krasnoyarskaya GES
12	MOESK
13	RusHydro
14	E.ON Russia (OGK-4)
15	Inter RAO UES
16	Rosseti
17	Mosenergo (TGK3)
18	OGK-2 (Gazprom)
19	Irkutskenergo
20	TGC1
21	Enel Russia
22	MRSK1 (Centra)
23	MRSK_CP
24	MRSK-Ural
25	MRSK-Volgi
26	MRSK-Yuga
27	DEC
28	MosES
29	VoTGK
30	Kuadra (TGK-4)
31	RAO EES Vostok
32	Lenenergo
33	Norilsk Nickel GMK
34	Mechel
35	RusAl
36	Alrosa
37	Severstal
38	NLMK
39	Polymetal International plc
40	Polyus Gold International

41	MMK
42	VSMPO
43	Raspadskaya
44	Chelyabinsk Zink Plant
45	Korshunovskii GOK
46	KuzbasskayaToplivnaya compania
47	Lenzoloto
48	Amet
49	Belon
50	Sollers
51	UAC Russia
52	Avtovaz
53	Aeroflot
54	Utair
55	Transaero
56	NovorossiyskCommercialSeaPort
57	FESCO
58	OJSC Sberbank
59	VTB
60	MICEX
61	AFK Sistema
62	Bank SP
63	Vbank
64	Megafon
65	MTS
66	Rostelecom
67	Pharmstandard
68	Magnit
69	M.Video
70	Protek
71	Cherkizovo Group
72	Dixi Group
73	Russkaya Akvakul’tura
74	Gruppa Razguliay
75	Apteki 36*6
76	PhosAgro
77	Uralkali
78	Acron
79	KazanOrgSintez
80	NiznekamskNeftekhim

Table 13. The sample of Russian companies used for quantitative content analysis

Appendix B

No.	Company	Sector
1	Gazprom	Oil and Gas
2	Novatek	Oil and Gas
3	Lukoil	Oil and Gas
4	MOESK	Electric Utilities
5	Kuadra (TGK-4)	Electric Utilities
6	Krasnoyarskaya GES	Electric Utilities
7	Norilsk Nickel GMK	Metals and Mining
8	Mechel	Metals and Mining
9	RusAl	Metals and Mining
10	Sollers	Industrial
11	UAC Russia	Industrial
12	Avtovaz	Industrial
13	Aeroflot	Transport
14	Transaero	Transport
15	FESCO	Transport
16	OJSC Sberbank	Financial
17	VTB	Financial
18	Vbank	Financial
19	Megafon	Telecoms
20	MTS	Telecoms
21	Rostelecom	Telecoms
22	Pharmstandard	Consumer goods and retail
23	Magnit	Consumer goods and retail
24	M.Video	Consumer goods and retail
25	PhosAgro	Chemicals
26	Uralkali	Chemicals
27	Acron	Chemicals

Table 14. The sample of Russian companies used for qualitative content analysis

Appendix C

		Scope 1 emissions							Scope 2 emissions			
No.	Company	1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, the rationale for chosing the base year, emissions	1Standards, methodologies, and assumptions	1The source of the emission factors used and the GWP rates	1Consolidation approach for	2Gross energy indirect GHG emissions	2Gases, included in the calculation, if available	2Base year, emissions in the base year	2Standards, methodologies and assumptions
1	Gazprom	1	1	1	1	1	1	1	1	0	1	1
2	RosNeft	1	0	0	1	0	0	1	1	0	1	0
3	Novatek	1	1	0	1	1	1	1	1	1	1	1
4	Lukoil	0	0	0	0	0	0	0	0	0	0	0
5	Bashneft	0	0	0	0	0	0	0	0	0	0	0
6	Tatneft	0	0	0	0	0	0	0	0	0	0	0
7	Transneft	0	0	0	0	0	0	0	0	0	0	0
8	Slavneft	0	0	0	0	0	0	0	0	0	0	0
9	SurgutNG	0	0	0	0	0	0	0	0	0	0	0
10	FGC UES (FSK EES)	0	0	0	0	0	0	0	1	1	1	1
11	Krasn GES	0	0	0	0	0	0	0	0	0	0	0
12	MOESK	1	1	0	1	1	1	0	0	0	0	0
13	RusHydro	0	0	0	0	0	0	0	0	0	0	0
14	E.ON Russia (OGK-4)	1	1	0	1	0	1	0	0	0	0	0
15	Inter RAO UES	1	0	0	1	0	0	0	0	0	0	0
16	Rosseti	0	0	0	0	0	0	0	0	0	0	0
17	Mosenergo (TGK3)	1	1	0	1	0	0	1	0	0	0	0
18	OGK-2 (Gazprom)	1	1	0	1	0	0	1	0	0	0	0
19	Irkutskenergo	0	0	0	0	0	0	0	0	0	0	0
20	TGC1	1	1	0	1	0	0	1	0	0	0	0
21	Enel Russia	0	0	0	0	0	0	0	0	0	0	0
22	MRSK1 (Centra)	0	0	0	0	0	0	0	0	0	0	0
23	MRSK_CP	0	0	0	0	0	0	0	0	0	0	0
24	MRSK-Ural	0	0	0	0	0	0	0	0	0	0	0
25	MRSK-Volgi	0	0	0	0	0	0	0	0	0	0	0
26	MRSK-Yuga	0	0	0	0	0	0	0	0	0	0	0
27	DEC	0	0	0	0	0	0	0	0	0	0	0
28	MosES	0	0	0	0	0	0	0	0	0	0	0
29	VoTGK	0	0	0	0	0	0	0	0	0	0	0
30	Kvadra (TGK-4)	0	0	0	0	0	0	0	0	0	0	0
31	RAO EES Vostok	1	1	0	0	1	0	1	0	0	0	0
32	Lenenergo	0	0	0	0	0	0	0	0	0	0	0
33	NorNickel GMK	1	1	0	1	0	0	1	1	1	1	0
34	Mechel	0	0	0	0	0	0	0	0	0	0	0
35	Rusal	1	1	0	0	0	0	0	0	0	0	0
36	Alrosa	0	0	0	0	0	0	0	0	0	0	0
37	Severstal	0	0	0	0	0	0	0	0	0	0	0
38	NLMK	1	0	0	1	0	0	0	0	0	0	0
39	Polymetal International plc	1	1	0	1	1	1	1	1	0	1	1
40	Polyus Gold International	1	1	0	1	1	1	1	1	1	1	1

Table 15. Disclosures benchmarked against GRI guidelines

		Scope 2 emissions				Scope 3 emissions					
No.	Company	2The source of the emission factors and the GWP	2Consolidation approach for	3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in CO2 metric tonsof	3Other indirect emissions categories and activities included	3Base year, the rationale, emissions in	3Standards, methodologies, assumption	3The source of the emission factors used and the GWP rates used or a reference to the GWP
1	Gazprom	1	1	0	0	0	0	0	0	0
2	RosNeft	0	1	1	0	0	0	1	0	0
3	Novatek	1	1	1	0	0	0	1	1	1
4	Lukoil	0	0	0	0	0	0	0	0	0
5	Bashneft	0	0	0	0	0	0	0	0	0
6	Tatneft	0	0	0	0	0	0	0	0	0
7	Transneft	0	0	0	0	0	0	0	0	0
8	Slavneft	0	0	0	0	0	0	0	0	0
9	SurgutNG	0	0	0	0	0	0	0	0	0
10	FGC UES (FSK EES)	1	0	0	0	0	0	0	0	0
11	Krasn GES	0	0	0	0	0	0	0	0	0
12	MOESK	0	0	0	0	0	0	0	0	0
13	RusHydro	0	0	0	0	0	0	0	0	0
14	E.ON Russia (OGK-4)	0	0	0	0	0	0	0	0	0
15	Inter RAO UES	0	0	0	0	0	0	0	0	0
16	Rosseti	0	0	0	0	0	0	0	0	0
17	Mosenergo (TGK3)	0	0	0	0	0	0	0	0	0
18	OGK-2 (Gazprom)	0	0	0	0	0	0	0	0	0
19	Irkutskenergo	0	0	0	0	0	0	0	0	0
20	TGC1	0	0	0	0	0	0	0	0	0
21	Enel Russia	0	0	0	0	0	0	0	0	0
22	MRSK1 (Centra)	0	0	0	0	0	0	0	0	0
23	MRSK_CP	0	0	0	0	0	0	0	0	0
24	MRSK-Ural	0	0	0	0	0	0	0	0	0
25	MRSK-Volgi	0	0	0	0	0	0	0	0	0
26	MRSK-Yuga	0	0	0	0	0	0	0	0	0
27	DEC	0	0	0	0	0	0	0	0	0
28	MosES	0	0	0	0	0	0	0	0	0
29	VoTGK	0	0	0	0	0	0	0	0	0
30	Kvadra (TGK-4)	0	0	0	0	0	0	0	0	0
31	RAO EES Vostok	0	0	0	0	0	0	0	0	0
32	Lenenergo	0	0	0	0	0	0	0	0	0
33	NorNickel GMK	0	1	0	0	0	0	0	0	0
34	Mechel	0	0	0	0	0	0	0	0	0
35	Rusal	0	0	0	0	0	0	0	0	0
36	Alrosa	0	0	0	0	0	0	0	0	0
37	Severstal	0	0	0	0	0	0	0	0	0
38	NLMK	0	0	0	0	0	0	0	0	0
39	Polymetal International plc	1	1	0	0	0	0	0	0	0
40	Polyus Gold International	1	1	1	1	0	0	1	1	1

Continued - Disclosures benchmarked against GRI guidelines

		Scope 2 emissions		Scope 3 emissions							
No.	Company	2The source of the emission factors and the GWP used	2Consolidation approach for	3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic CO2 emissions in metric tons	3Other indirect emissions in categories and activities included	3Base year, the rationale, emissions in	3Standards, methodologies, and assumption	3The source of the emission factors used and the GWP rates used or a reference to the GWP
41	MMK	0	0	0	0	0	0	0	0	0
42	VSMPO	0	0	0	0	0	0	0	0	0
43	Raspadskaya	0	0	0	0	0	0	0	0	0
44	Chelyabinsk Zink Plant	0	0	0	0	0	0	0	0	0
45	Korshunovskii GOK	0	0	0	0	0	0	0	0	0
46	KuzbasskayaToplivnaya compania	0	0	0	0	0	0	0	0	0
47	Lenzoloto	0	0	0	0	0	0	0	0	0
48	Amet	0	0	0	0	0	0	0	0	0
49	Belon	0	0	0	0	0	0	0	0	0
50	Sollers	0	0	0	0	0	0	0	0	0
51	UACRussia	0	0	0	0	0	0	0	0	0
52	Avtovaz	0	0	0	0	0	0	0	0	0
53	Aeroflot	0	0	0	0	0	0	0	0	0
54	Utair	0	0	0	0	0	0	0	0	0
55	Transaero	0	0	0	0	0	0	0	0	0
56	NovorossiyskCommercialSeaPort	0	0	0	0	0	0	0	0	0
57	FESCO	0	0	0	0	0	0	0	0	0
58	OJSC Sberbank	0	0	0	0	0	0	0	0	0
59	VTB	0	0	0	0	0	0	0	0	0
60	MICEX	0	0	0	0	0	0	0	0	0
61	AFK Sistema	0	0	0	0	0	0	0	0	0
62	Bank SP	0	0	0	0	0	0	0	0	0
63	Vbank	0	0	0	0	0	0	0	0	0
64	Megafon	0	0	0	0	0	0	0	0	0
65	MTS	0	0	0	0	0	0	0	0	0
66	Rostelecom	0	0	0	0	0	0	0	0	0
67	Pharmstandard	0	0	0	0	0	0	0	0	0
68	Magnit	0	0	0	0	0	0	0	0	0
69	M.video	0	0	0	0	0	0	0	0	0
70	Protek	0	0	0	0	0	0	0	0	0
71	Cherkizovo Group	0	0	0	0	0	0	0	0	0
72	Dixi Group	0	0	0	0	0	0	0	0	0
73	Russkaya Akvakul'tura	0	0	0	0	0	0	0	0	0
74	Gruppa Razguliay	0	0	0	0	0	0	0	0	0
75	Apteki 36*6	0	0	0	0	0	0	0	0	0
76	PhosAgro	0	0	0	0	0	0	0	0	0
77	Uralkali	0	0	0	0	0	0	0	0	0
78	Acron	0	0	0	0	0	0	0	0	0
79	KazanOrgSintez	0	0	0	0	0	0	0	0	0
80	NiznekamskNeftekhim	0	0	0	0	0	0	0	0	0

Continued - Disclosures benchmarked against GRI guidelines

		GHG emissions intensity				Reduction of GHG emissions								
No.	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in intensity	Gases included in calculation of GHG reduction	The amount of emissions achieved as a reduction	Gases included in calculation of reduction	Base year and Standards, rationale of chosing year (reduction)	Standards, methodologies, that and assumptions used (reduction)	Report where the reduction of emissions occurred	Total	Any disclosure
1	Gazprom	1	1	1	1	1	1	1	0	1	8	1
2	RosNeft	0	0	0	0	1	0	0	0	1	2	1
3	Novatek	0	0	0	0	1	1	0	0	1	3	1
4	Lukoil	0	0	0	0	1	0	0	0	0	1	1
5	Bashneft	0	0	0	0	1	0	0	0	0	1	1
6	Tatneft	0	0	0	0	1	0	1	0	0	2	1
7	Transneft	0	0	0	0	0	0	0	0	0	0	0
8	Slavneft	0	0	0	0	0	0	0	0	0	0	0
9	SurgutNG	0	0	0	0	1	1	0	0	0	2	1
10	FGC UES (FSK EES)	0	0	0	0	0	0	0	0	0	0	1
11	Krasn GES	0	0	0	0	0	0	0	0	0	0	0
12	MOESK	0	0	0	0	1	1	1	0	1	4	1
13	RusHydro	0	0	0	0	1	0	1	0	0	2	1
14	E.ON Russia (OGK-4)	0	0	0	0	1	1	1	0	0	3	1
15	Inter RAO UES	1	0	0	0	1	0	1	0	0	3	1
16	Rosseti	0	0	0	0	0	0	0	0	0	0	0
17	Mosenergo (TGK3)	0	0	0	0	1	1	1	0	1	4	1
18	OGK-2 (Gazprom)	0	0	0	0	1	1	1	0	0	3	1
19	Irkutskenergo	1	1	1	1	1	1	1	0	1	8	1
20	TGC1	0	0	0	0	1	1	1	0	0	3	1
21	Enel Russia	0	0	0	0	0	0	0	0	0	0	0
22	MRSK1 (Centra)	0	0	0	0	0	0	0	0	0	0	0
23	MRSK_CP	0	0	0	0	0	0	0	0	0	0	0
24	MRSK-Ural	0	0	0	0	0	0	0	0	0	0	0
25	MRSK-Volgi	0	0	0	0	0	0	0	0	0	0	0
26	MRSK-Yuga	0	0	0	0	0	0	0	0	0	0	0
27	DEC	0	0	0	0	0	0	0	0	0	0	0
28	MosES	0	0	0	0	0	0	0	0	0	0	0
29	VoTGK	0	0	0	0	0	0	0	0	0	0	0
30	Kvadra (TGK-4)	0	0	0	0	0	0	0	0	0	0	0
31	RAO EES Vostok	0	0	0	0	1	1	0	0	0	2	1
32	Lenenergo	0	0	0	0	0	0	0	0	0	0	0
33	NorNickel GMK	0	0	0	0	1	1	1	0	1	4	1
34	Mechel	0	0	0	0	0	0	0	0	0	0	0
35	Rusal	0	0	0	0	1	1	1	0	1	4	1
36	Alrosa	0	0	0	0	0	0	0	0	0	0	0
37	Severstal	0	0	0	0	0	0	0	0	0	0	0
38	NLMK	1	1	0	0	1	0	1	0	0	4	1
39	Polymetal International plc	1	1	1	0	1	0	1	0	1	6	1
40	Polyus Gold International	1	1	1	0	1	0	1	0	1	6	1

Continued - Disclosures benchmarked against GRI guidelines

		GHG emissions intensity				Reduction of GHG emissions								
No.	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in intensity	Gases included in calculation of intensity	The amount of GHG emissions reduction achieved as a	Gases included in calculation of reduction	Base year and rationale for chosing that year (reduction)	Standards, methodologies, and assumptions used (reduction)	Report where the reduction of emissions occurred	Total	Any disclosure
41	MMK	0	0	0	0	0	0	0	0	0	0	0
42	VSMPO	0	0	0	0	0	0	0	0	0	0	0
43	Raspadskaya	0	0	0	0	0	0	0	0	0	0	0
44	Chelyabinsk Zink Plant	0	0	0	0	0	0	0	0	0	0	0
45	Korshunovskii GOK	0	0	0	0	0	0	0	0	0	0	0
46	KuzbasskayaToplivnaya compania	0	0	0	0	0	0	0	0	0	0	0
47	Lenzoloto	0	0	0	0	0	0	0	0	0	0	0
48	Amet	0	0	0	0	1	0	1	0	0	2	1
49	Belon	0	0	0	0	0	0	0	0	0	0	0
50	Sollers	0	0	0	0	0	0	0	0	0	0	1
51	UACRussia	0	0	0	0	0	0	0	0	0	0	1
52	Avtovaz	0	0	0	0	0	0	0	0	0	0	0
53	Aeroflot	0	0	0	0	0	0	0	0	0	0	0
54	Utair	0	0	0	0	0	0	0	0	0	0	1
55	Transaero	0	0	0	0	0	0	0	0	0	0	0
56	NovorossiyskCommercialSeaPort	0	0	0	0	0	0	0	0	0	0	0
57	FESCO	0	0	0	0	0	0	0	0	0	0	0
58	OJSC Sberbank	0	0	0	0	0	0	0	0	0	0	0
59	VTB	0	0	0	0	0	0	0	0	0	0	0
60	MICEX	0	0	0	0	0	0	0	0	0	0	0
61	AFK Sistema	0	0	0	0	0	0	0	0	0	0	0
62	Bank SP	0	0	0	0	0	0	0	0	0	0	0
63	Vbank	0	0	0	0	0	0	0	0	0	0	0
64	Megafon	0	0	0	0	0	0	0	0	0	0	0
65	MTS	0	0	0	0	1	0	0	0	0	1	1
66	Rostelecom	0	0	0	0	0	0	0	0	0	0	0
67	Pharmstandard	0	0	0	0	0	0	0	0	0	0	0
68	Magnit	0	0	0	0	0	0	0	0	0	0	0
69	M.video	0	0	0	0	0	0	0	0	0	0	0
70	Protek	0	0	0	0	0	0	0	0	0	0	0
71	Cherkizovo Group	0	0	0	0	0	0	0	0	0	0	0
72	Dixi Group	0	0	0	0	0	0	0	0	0	0	0
73	Russkaya Akvakul'tura	0	0	0	0	0	0	0	0	0	0	0
74	Gruppa Razguliay	0	0	0	0	0	0	0	0	0	0	0
75	Apteki 36*6	0	0	0	0	0	0	0	0	0	0	0
76	PhosAgro	0	0	0	0	0	0	0	0	0	0	0
77	Uralkali	0	0	0	0	1	0	1	0	1	3	1
78	Acron	0	0	0	0	0	0	0	0	0	0	0
79	KazanOrgSintez	0	0	0	0	1	1	1	0	1	4	1
80	NiznekamskNeftekhim	0	0	0	0	0	0	0	0	0	0	0

Continued - Disclosures benchmarked against GRI guidelines

		Scope 1 emissions							Scope 2 emissions			
No.	Company	1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, rationale for chosing the base year, emissions	1Standards, methodologies, and assumptions	1The source of the emission factors used and the GWP rates	1Consolidation approach for emissions	2Gross energy indirect GHG emissions	2Gases, included in the calculation, if available	2Base year, the rationale, emissions in the base year	2Standards, methodologies and assumptions
41	MMK	0	0	0	0	0	0	0	0	0	0	0
42	VSMPO	0	0	0	0	0	0	0	0	0	0	0
43	Raspadskaya	0	0	0	0	0	0	0	0	0	0	0
44	Chelyabinsk Zink Plant	0	0	0	0	0	0	0	0	0	0	0
45	Korshunovskii GOK	0	0	0	0	0	0	0	0	0	0	0
46	KuzbasskayaToplivnaya companiа	0	0	0	0	0	0	0	0	0	0	0
47	Lenzoloto	0	0	0	0	0	0	0	0	0	0	0
48	Amet	0	0	0	0	0	0	0	0	0	0	0
49	Belon	0	0	0	0	0	0	0	0	0	0	0
50	Sollers	1	0	0	1	0	0	0	0	0	0	0
51	UACRussia	0	0	0	0	0	0	0	0	0	0	0
52	Avtovaz	0	0	0	0	0	0	0	0	0	0	0
53	Aeroflot	0	0	0	0	0	0	0	0	0	0	0
54	Utair	0	1	0	1	0	0	0	0	0	0	0
55	Transaero	0	0	0	0	0	0	0	0	0	0	0
56	NovorossiyskCommercialSeaPort	0	0	0	0	0	0	0	0	0	0	0
57	FESCO	0	0	0	0	0	0	0	0	0	0	0
58	OJSC Sberbank	0	0	0	0	0	0	0	0	0	0	0
59	VTB	0	0	0	0	0	0	0	0	0	0	0
60	MICEX	0	0	0	0	0	0	0	0	0	0	0
61	AFK Sistema	0	0	0	0	0	0	0	0	0	0	0
62	Bank SP	0	0	0	0	0	0	0	0	0	0	0
63	Vbank	0	0	0	0	0	0	0	0	0	0	0
64	Megafon	0	0	0	0	0	0	0	0	0	0	0
65	MTS	0	0	0	0	0	0	0	0	0	0	0
66	Rostelecom	0	0	0	0	0	0	0	0	0	0	0
67	Pharmstandard	0	0	0	0	0	0	0	0	0	0	0
68	Magnit	0	0	0	0	0	0	0	0	0	0	0
69	M.video	0	0	0	0	0	0	0	0	0	0	0
70	Protek	0	0	0	0	0	0	0	0	0	0	0
71	Cherkizovo Group	0	0	0	0	0	0	0	0	0	0	0
72	Dixi Group	0	0	0	0	0	0	0	0	0	0	0
73	Russkaya Akvakul'tura	0	0	0	0	0	0	0	0	0	0	0
74	Gruppa Razguliay	0	0	0	0	0	0	0	0	0	0	0
75	Apteki 36*6	0	0	0	0	0	0	0	0	0	0	0
76	PhosAgro	0	0	0	0	0	0	0	0	0	0	0
77	Uralkali	1	0	0	1	0	0	1	1	0	1	0
78	Acron	0	0	0	0	0	0	0	0	0	0	0
79	KazanOrgSintez	1	1	0	1	0	0	0	0	0	0	0
80	NiznekamskNeftekhim	0	0	0	0	0	0	0	0	0	0	0

Continued - Disclosures benchmarked against GRI guidelines

Appendix D

| | | Scope 1 | | |

		Scope 1														
	Company	1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, the rationale for chosing the base year, emissions in the base year	1Standards, methodologies, and assumptions used	1The source of the emission factors used and the GWP rates used	1Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil generating capacity	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil fuel generation	For Electric Utilities: Report CO2 per MWh estimated net delivery to end users	For Oil & Gas: For bases report emissions on both operational control and equity
39	Megafon (AR_2013)	0	0	0	0	0	0	0				
40	Megafon (SR_2013)	0	0	0	0	0	0	0				
41	Megafon (web-site)	0	0	0	0	0	0	0				
42	Pharmstandard (AR_2013)	0	0	0	0	0	0	0				
43	Pharmstandard (web-site)	0	0	0	0	0	0	0				
44	MTS_web-site	0	0	0	0	0	0	0				
45	MTS_AR_2013	0	0	0	0	0	0	0				
46	MTS_SR_2012	0	0	0	0	0	0	0				
47	RosNeft_SR_2012	1	0	0	1	0	0	1				0
48	RosNeft_AR_2012	0	0	0	0	0	0	0				0
49	RosNeft_website	0	0	0	0	0	0	0				0
50	RusAl_SR_2012	1	1	0	1	0	0	0				
51	RusAl_AR_2013	0	0	0	0	0	0	0				
52	RusAl_web-site	0	0	0	0	0	0	0				
53	VTB_AR_2013	0	0	0	0	0	0	0				
54	VTB_SR_2013	0	0	0	0	0	0	0				
55	VTB_web-site	0	0	0	0	0	0	0				
56	Magnit_AR_2013	0	0	0	0	0	0	0				
57	Magnit_web-site	0	0	0	0	0	0	0				
58	Utair_AR_2013	0	1	0	1	0	0	0				
59	Utair_web-site	0	0	0	0	0	0	0				
60	NCSP_AR_2013	0	0	0	0	0	0	0				
61	NCSP_web-site	0	0	0	0	0	0	0				
62	FESCO_AR_2013	0	0	0	0	0	0	0				
63	FESCO_web-site	0	0	0	0	0	0	0				
64	FESCO_SR_2010-2012	0	0	0	0	0	0	0				
65	Tatneft_AR_2013	0	0	0	0	0	0	0				0
66	Tatneft_web-site	0	0	0	0	0	0	0				0
67	Transneft_AR_2013	0	0	0	0	0	0	0				0
68	Transneft_web-site	0	0	0	0	0	0	0				0
69	SurgutNG_ER_2013	0	0	0	0	0	0	0				0
70	SurgutNG_AR_2013	0	0	0	0	0	0	0				0
71	SurgutNG_web-site	0	0	0	0	0	0	0				0
72	Slavneft_AR_2013	0	0	0	0	0	0	0				0
73	Slavneft_web-site	0	0	0	0	0	0	0				0
74	E.On Russia_AR_2013	1	1	0	1	0	1	0	1	0	0	
75	E.ON Russia_website	0	0	0	0	0	0	0	0	0	0	
76	InterRAO UES_web-site	0	0	0	0	0	0	0	0	0	0	
77	Inter RAO UES_AR_2013	1	0	0	1	0	0	0	1	0	0	
78	Inter RAO UES_SR_2012	1	0	0	1	0	0	0	1	0	0	
79	Rosseti_web-site	0	0	0	0	0	0	0	0	0	0	
80	Rosseti_AR_2013	0	0	0	0	0	0	0	0	0	0	
81	Rosseti_SR_2013	0	0	0	0	0	0	0	0	0	0	

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 1												
	Company	1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, the rationale for chosing the base year, emissions in the base year	1Standards, methodologies, and assumptions used	1The source of the emission factors used and the GWP rates used	1Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil generating capacity	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil generation	For Electric Utilities: Report CO2 per MWh for Net estimated fuel delivery to users	For For Oil & Gas: For Electric Utilities: report emissions on both operational net control and equity bases		
82	Mosenergo_web-site	1	0	0	1	0	0	0	0	0	0	0		
83	Mosenergo_AR_2013	1	0	0	1	0	0	0	0	0	0	0		
84	Mosenergo_SR_2012-2013	1	1	0	1	0	0	1	0	0	0	0		
85	OGK-2_SR_2012-2013	1	1	0	1	0	0	1	0	0	0	0		
86	OGK-2_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
87	OGK-2_website	0	0	0	0	0	0	0	0	0	0	0		
88	Irkutskenergo_AR_2012	0	0	0	0	0	0	0	0	0	0	0		
89	Irkutskenergo_web-site	0	0	0	0	0	0	0	0	0	0	0		
90	Irkutskenergo_SR_2014	0	0	0	0	0	0	0	0	0	0	0		
91	TGC1_SR_2012-2013	1	1	0	1	0	0	1	0	0	0	0		
92	TGC1_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
93	TGC1_web-site	0	0	0	0	0	0	0	0	0	0	0		
94	Enel Russia (OGK-5)_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
95	Enel Russia (OGK-5)_web-site	0	0	0	0	0	0	0	0	0	0	0		
96	MRSK1_web-site	0	0	0	0	0	0	0	0	0	0	0		
97	MRSK1_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
98	DEC_web-site	0	0	0	0	0	0	0	0	0	0	0		
99	DEC_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
100	MosES_web-site	0	0	0	0	0	0	0	0	0	0	0		
101	MosES_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
102	MRSK-CP_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
103	MRSK-CP_SR_2013	0	0	0	0	0	0	0	0	0	0	0		
104	MRSK-CP_web-site	0	0	0	0	0	0	0	0	0	0	0		
105	MRSK-Ural_AR_2013(interactive)	0	0	0	0	0	0	0	0	0	0	0		
106	MRSK-Ural_web-site	0	0	0	0	0	0	0	0	0	0	0		
107	VoTGK_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
108	VoTGK_web-site	0	0	0	0	0	0	0	0	0	0	0		
109	Kvadra_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
110	Kvadra_web-site	0	0	0	0	0	0	0	0	0	0	0		
111	Lenenergo_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
112	Lenenergo_web	0	0	0	0	0	0	0	0	0	0	0		
113	MRSK-volgi_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
114	MRSK-volgi_web-site	0	0	0	0	0	0	0	0	0	0	0		
115	RAO UES - Vostoka_web (interactiv	1	1	0	0	1	0	1	0	0	0	0		
116	Rao UES - Vostoka_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
117	MRSK-Yuga_AR_2013	0	0	0	0	0	0	0	0	0	0	0		
118	MRSK-Yuga_web-site	0	0	0	0	0	0	0	0	0	0	0		
119	Rostelecom_web-site	0	0	0	0	0	0	0	0	0	0	0		
120	Rostelecom_SR_2013	0	0	0	0	0	0	0	0	0	0	0		
121	Rostelecom_AR_2013	0	0	0	0	0	0	0	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

	Company	Scope 1																	
		1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, the rationale for chosing the base year, emissions in the base year	1Standards, methodologies, and assumptions used	1The source of the emission factors used and the GWP rates used	1Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for Net generation from all generating capacity	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil generation	For Electric Utilities: Report CO2 per MWh for Net estimated fuel delivery to end users	For Oil & Gas: For both operational control and equity bases	For Oil & Gas: report emissions on net
122	Alrosa_AR_2013	0	0	0	0	0	0	0					
123	Alrosa_web-site	0	0	0	0	0	0	0					
124	Alrosa_SR_2013	0	0	0	0	0	0	0					
125	Severstal_web-site	0	0	0	0	0	0	0					
126	Severstal_AR_2013	0	0	0	0	0	0	0					
127	Severstal_SR_2013	0	0	0	0	0	0	0					
128	NLMK_web-site	1	0	0	1	1	0	0					
129	NLMK_AR_2013	1	0	0	1	1	0	0					
130	NLMK_ER_2013	1	0	0	1	0	0	0					
131	Polymetal_web-site	0	0	0	0	0	0	0					
132	Polymetal_AR_2013	1	1	0	1	1	1	1					
133	Polymetal_ER_2013-2014	1	0	0	1	1	1	1					
134	Polyusgold_web-site	0	0	0	0	0	0	0					
135	Polyusgold_AR_2013	1	1	0	1	1	1	1					
136	MMK_AR_2013	0	0	0	0	0	0	0					
137	MMK_CSR_2013	0	0	0	0	0	0	0					
138	MMK_web-site	0	0	0	0	0	0	0					
139	VSMPO_web-site	0	0	0	0	0	0	0					
140	VSMPO_AR_2013	0	0	0	0	0	0	0					
141	Raspadskaya_web-site	0	0	0	0	0	0	0					
142	Raspadskaya_AR_2014	0	0	0	0	0	0	0					
143	Chelyabinsk ZinkPlant_web-site	0	0	0	0	0	0	0					
144	Chelyabinsk ZinkPlan_AR_2012	0	0	0	0	0	0	0					
145	Korshunovskii GOK_web-site	0	0	0	0	0	0	0					
146	Korshunovskii GOK_AR_2013	0	0	0	0	0	0	0					
147	Kuzbasskaya TK_web-site	0	0	0	0	0	0	0					
148	Kuzbasskaya TK_AR_2012	0	0	0	0	0	0	0					
149	Lenzoloto_web-site	0	0	0	0	0	0	0					
150	Lenzoloto_AR_2013	0	0	0	0	0	0	0					
151	Amet_web-site	0	0	0	0	0	0	0					
152	Amet_AR_2013	0	0	0	0	0	0	0					
153	Belon_web-site	0	0	0	0	0	0	0					
154	Belon_AR_2013	0	0	0	0	0	0	0					
155	Sollers_web-site	0	0	0	0	0	0	0					
156	Sollers_AR_2013	1	0	0	1	0	0	0					
157	UACRussia_web-site	0	0	0	0	0	0	0					
158	UACRussia_AR_2013	0	0	0	0	0	0	0					
159	Avtovaz_web-site	0	0	0	0	0	0	0					
160	Avtovaz_AR_2013	0	0	0	0	0	0	0					
161	MICEX_web-site	0	0	0	0	0	0	0					
162	MICEX_AR_2013	0	0	0	0	0	0	0					

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 1												
	Company	1Gross direct GHG emissions	1Gases included in the calculation	1Biogenetic CO2 emissions	1Base year, the rationale for chosing the base year, emissions in the base year	1Standards, methodologies, and assumptions used	1The source of the emission factors used and the GWP rates used	1Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil generating capacity	For Electric Utilities: Report CO2e per MWh for Net generation from all fossil fuel generation	For Electric Utilities: Report CO2 per MWh for estimated net delivery to end users	For Oil & Gas: For emissions on both control and equity bases
163	AFK Sistema_web-site	0	0	0	0	0	0	0				
164	AFK Sistema_AR_2013	0	0	0	0	0	0	0				
165	AFK Sistema_SR_2013	0	0	0	0	0	0	0				
166	Vbank_web-site	0	0	0	0	0	0	0				
167	Vbank_AR_2013	0	0	0	0	0	0	0				
168	Mvideo_web-site	0	0	0	0	0	0	0				
169	Mvideo_AR_2013	0	0	0	0	0	0	0				
170	Protek_web-site	0	0	0	0	0	0	0				
171	Protek_AR_2013	0	0	0	0	0	0	0				
172	Cherkizovo Group_web-site	0	0	0	0	0	0	0				
173	Cherkizovo Group_AR_2013	0	0	0	0	0	0	0				
174	Dixi Group_web-site	0	0	0	0	0	0	0				
175	Dixi Group_AR_2013	0	0	0	0	0	0	0				
176	Russkaya Akvakul'tura_web-site	0	0	0	0	0	0	0				
177	Russkaya Akvakul'tura_AR_2013	0	0	0	0	0	0	0				
178	Gruppa Razguliay_web-site	0	0	0	0	0	0	0				
179	Gruppa Razguliay_AR_2013	0	0	0	0	0	0	0				
180	Apteki 36*6_web-site	0	0	0	0	0	0	0				
181	Apteki 36*6_AR_2013	0	0	0	0	0	0	0				
182	PhosAgro_AR_2013	0	0	0	0	0	0	0				
183	PhosAgro_SR_2013	0	0	0	0	0	0	0				
184	PhosAgro_web-site	0	0	0	0	0	0	0				
185	Uralkali_web-site	1	0	0	1	0	0	0				
186	Uralkali_GRI index	1	0	0	1	0	0	1				
187	Uralkali_AR_2013	1	0	0	1	0	0	1				
188	Acron_web-site	0	0	0	0	0	0	0				
189	Acron_AR_2013	0	0	0	0	0	0	0				
190	KazanOrgSintez_web-site	0	0	0	0	0	0	0				
191	KazanOrgSintez_AR_2013	0	0	0	0	0	0	0				
192	KazanOrgSintez_SR_2013	1	1	0	1	0	0	0				
193	Niznekamskneftekhim_web-site	0	0	0	0	0	0	0				
194	Niznekamskneftekhim_AR_2013	0	0	0	0	0	0	0				
195	Bank SP_web-site	0	0	0	0	0	0	0				
196	Bank SP_AR_2013	0	0	0	0	0	0	0				

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 2							
No.	Company	2Gross energy indirect GHG emissions	2Gases, included in calculation, if available	2Base year, the rationale, emissions in the base year	2Standards, methodologies and assumptions used	2The source of the emission factors used and the GWP n approach used, if available	2Consolidatio for emissions	For Electric Utilities: Report net delivery to end users, incl. emissions from purchased power	For Oil & Gas: report emissions CO2e per MWh for estimated related to activities separately if there is big difference
1	OAO Gazprom (ER_2013)	0	0	0	0	0	0	0	0
2	OAO Gazprom (AR_2013)	0	0	0	0	0	0	0	0
3	OAO Gazprom (web-site)	0	0	0	0	0	0	0	0
4	OAO Gazprom (CDP_2011)	1	1	0	1	1	1	1	1
5	Aeroflot (AR_2012)	0	0	0	0	0	0		
6	Aeroflot (web-site)	0	0	0	0	0	0		
7	FGC UES (AR_2012)	0	0	0	0	0	0	0	
8	FGC UES (SR_2012)	1	1	0	0	0	0	0	
9	FGC UES (CDP_2011)	1	1	1	1	1	0	0	
10	FGC UES (web-site)	0	0	0	0	0	0	0	
11	Krasnoyarskays GES (AR_2012)	0	0	0	0	0	0	0	
12	Krasnoyarskays GES (CDP_2012)	0	0	0	0	0	0	0	
13	Krasnoyarskays GES (web-site)	0	0	0	0	0	0	0	
14	MOESK (AR_2012)	0	0	0	0	0	0	0	
15	MOESK (SR_2012)	0	0	0	0	0	0	0	
16	MOESK (CDP_2012)	0	0	0	0	0	0		
17	MOESK_web-site	0	0	0	0	0	0	0	
18	Novatek (AR_2013)	0	0	0	0	0	0		0
19	Novatek (CDP_2013)	1	1	1	1	1	1		1
20	Novatek (web-site)	0	0	0	0	0	0		0
21	RusHydro (AR_2013)	0	0	0	0	0	0	0	
22	RusHydro (web-site)	0	0	0	0	0	0	0	
23	Transaero (AR_2012)	0	0	0	0	0	0		
24	Transaero (web-site)	0	0	0	0	0	0		
25	Lukoil (AR_2013)	0	0	0	0	0	0	0	0
26	Lukoil (SR_2011-2012)	0	0	0	0	0	0	0	0
27	Lukoil (web-site)	0	0	0	0	0	0	0	0
28	NorNickel (AR_2013)	0	0	0	0	0	0		
29	NorNickel (SR_2013)	1	1	1	0	0	1		
30	NorNickel (web-site)	1	0	0	0	0	0		
31	Sberbank (AR_2013)	0	0	0	0	0	0		
32	Sberbank (SR_2013)	0	0	0	0	0	0		
33	Sberbank (web-site)	0	0	0	0	0	0		
34	Bashneft (AR_2013)	0	0	0	0	0	0		0
35	Bashneft (SR_2013)	0	0	0	0	0	0		0
36	Bashneft (web-site)	0	0	0	0	0	0		
37	Mechel (Form 20-F_2013)	0	0	0	0	0	0		
38	Mechel (web-site)	0	0	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

	Company	Scope 2												
		2Gross energy indirect GHG emissions	2Gases, included in calculation, if available	2Base year, 2Standards, methodologies and assumptions used	2Standards, methodologies	2The source of the emission factors used and the GWP used, if available	2Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for estimated net delivery to end users, of purchased power	For Oil & Gas: For report emissions related to activities incl. emissions from separately if there is big difference	
39	Megafon (AR_2013)	0	0	0	0	0	0	0		
40	Megafon (SR_2013)	0	0	0	0	0	0	0		
41	Megafon (web-site)	0	0	0	0	0	0	0		
42	Pharmstandard (AR_2013)	0	0	0	0	0	0	0		
43	Pharmstandard (web-site)	0	0	0	0	0	0	0		
44	MTS_web-site	0	0	0	0	0	0	0		
45	MTS_AR_2013	0	0	0	0	0	0	0		
46	MTS_SR_2012	0	0	0	0	0	0	0		
47	RosNeft_SR_2012	1	0	1	0	0	1	1		1
48	RosNeft_AR_2012	0	0	0	0	0	0	0		0
49	RosNeft_website	0	0	0	0	0	0	0		0
50	RusAl_SR_2012	0	0	0	0	0	0	0		
51	RusAl_AR_2013	0	0	0	0	0	0	0		
52	RusAl_web-site	0	0	0	0	0	0	0		
53	VTB_AR_2013	0	0	0	0	0	0	0		
54	VTB_SR_2013	0	0	0	0	0	0	0		
55	VTB_web-site	0	0	0	0	0	0	0		
56	Magnit_AR_2013	0	0	0	0	0	0	0		
57	Magnit_web-site	0	0	0	0	0	0	0		
58	Utair_AR_2013	0	0	0	0	0	0	0		
59	Utair_web-site	0	0	0	0	0	0	0		
60	NCSP_AR_2013	0	0	0	0	0	0	0		
61	NCSP_web-site	0	0	0	0	0	0	0		
62	FESCO_AR_2013	0	0	0	0	0	0	0		
63	FESCO_web-site	0	0	0	0	0	0	0		
64	FESCO_SR_2010-2012	0	0	0	0	0	0	0		
65	Tatneft_AR_2013	0	0	0	0	0	0	0		0
66	Tatneft_web-site	0	0	0	0	0	0	0		0
67	Transneft_AR_2013	0	0	0	0	0	0	0		0
68	Transneft_web-site	0	0	0	0	0	0	0		0
69	SurgutNG_ER_2013	0	0	0	0	0	0	0		0
70	SurgutNG_AR_2013	0	0	0	0	0	0	0		0
71	SurgutNG_web-site	0	0	0	0	0	0	0		0
72	Slavneft_AR_2013	0	0	0	0	0	0	0		0
73	Slavneft_web-site	0	0	0	0	0	0	0		0
74	E.On Russia_AR_2013	0	0	0	0	0	0	0	0	
75	E.ON Russia_website	0	0	0	0	0	0	0	0	
76	InterRAO UES_web-site	0	0	0	0	0	0	0	0	
77	Inter RAO UES_AR_2013	0	0	0	0	0	0	0	0	
78	Inter RAO UES_SR_2012	0	0	0	0	0	0	0	0	
79	Rosseti_web-site	0	0	0	0	0	0	0	0	
80	Rosseti_AR_2013	0	0	0	0	0	0	0	0	
81	Rosseti_SR_2013	0	0	0	0	0	0	0	0	

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

| | Company | Scope 2 | | |

	Company	Scope 2								For Oil & Gas:
		2Gross energy indirect GHG emissions	2Gases, included in calculation, if available	2Base year, 2Standards, methodologies in the rationale, if emissions in and assumptions the base year used	2The source of the emission factors used and the GWP used, if available	2Consolidatio n approach for emissions	For Electric Utilities: Report CO2e per MWh for estimated net delivery to end users, of purchased power	For emissions related to activities from special interest separately if there is big difference		
122	Alrosa_AR_2013	0	0	0	0	0	0			
123	Alrosa_web-site	0	0	0	0	0	0			
124	Alrosa_SR_2013	0	0	0	0	0	0			
125	Severstal_web-site	0	0	0	0	0	0			
126	Severstal_AR_2013	0	0	0	0	0	0			
127	Severstal_SR_2013	0	0	0	0	0	0			
128	NLMK_web-site	0	0	0	0	0	0			
129	NLMK_AR_2013	0	0	0	0	0	0			
130	NLMK_ER_2013	0	0	0	0	0	0			
131	Polymetal_web-site	0	0	0	0	0	0			
132	Polymetal_AR_2013	1	0	1	1	1	1			
133	Polymetal_ER_2013-2014	1	0	1	1	1	1			
134	Polyusgold_web-site	0	0	0	0	0	0			
135	Polyusgold_AR_2013	1	1	1	1	1	1			
136	MMK_AR_2013	0	0	0	0	0	0			
137	MMK_CSR_2013	0	0	0	0	0	0			
138	MMK_web-site	0	0	0	0	0	0			
139	VSMPO_web-site	0	0	0	0	0	0			
140	VSMPO_AR_2013	0	0	0	0	0	0			
141	Raspadskaya_web-site	0	0	0	0	0	0			
142	Raspadskaya_AR_2014	0	0	0	0	0	0			
143	Chelyabinsk ZinkPlant_web-site	0	0	0	0	0	0			
144	Chelyabinsk ZinkPlan_AR_2012	0	0	0	0	0	0			
145	Korshunovskii GOK_web-site	0	0	0	0	0	0			
146	Korshunovskii GOK_AR_2013	0	0	0	0	0	0			
147	Kuzbasskaya TK_web-site	0	0	0	0	0	0			
148	Kuzbasskaya TK_AR_2012	0	0	0	0	0	0			
149	Lenzoloto_web-site	0	0	0	0	0	0			
150	Lenzoloto_AR_2013	0	0	0	0	0	0			
151	Amet_web-site	0	0	0	0	0	0			
152	Amet_AR_2013	0	0	0	0	0	0			
153	Belon_web-site	0	0	0	0	0	0			
154	Belon_AR_2013	0	0	0	0	0	0			
155	Sollers_web-site	0	0	0	0	0	0			
156	Sollers_AR_2013	0	0	0	0	0	0			
157	UACRussia_web-site	0	0	0	0	0	0			
158	UACRussia_AR_2013	0	0	0	0	0	0			
159	Avtovaz_web-site	0	0	0	0	0	0			
160	Avtovaz_AR_2013	0	0	0	0	0	0			
161	MICEX_web-site	0	0	0	0	0	0			
162	MICEX_AR_2013	0	0	0	0	0	0			

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

	Company	Scope 2							
		2Gross energy indirect GHG emissions	2Gases, included in calculation, if available	2Base year, the rationale, emissions in the base year	2Standards, methodologies and assumptions used	2The source of the emission factors used and the GWP n approach used, if available	2Consolidation approach for emissions	For Electric Utilities: Report CO2e per MWh for estimated net delivery to end users, incl. emissions from purchased power	For For Oil & Gas: report emissions related to activities of special interest separately if there is big difference
163	AFK Sistema_web-site	0	0	0	0	0	0		
164	AFK Sistema_AR_2013	0	0	0	0	0	0		
165	AFK Sistema_SR_2013	0	0	0	0	0	0		
166	Vbank_web-site	0	0	0	0	0	0		
167	Vbank_AR_2013	0	0	0	0	0	0		
168	Mvideo_web-site	0	0	0	0	0	0		
169	Mvideo_AR_2013	0	0	0	0	0	0		
170	Protek_web-site	0	0	0	0	0	0		
171	Protek_AR_2013	0	0	0	0	0	0		
172	Cherkizovo Group_web-site	0	0	0	0	0	0		
173	Cherkizovo Group_AR_2013	0	0	0	0	0	0		
174	Dixi Group_web-site	0	0	0	0	0	0		
175	Dixi Group_AR_2013	0	0	0	0	0	0		
176	Russkaya Akvakul'tura_web-site	0	0	0	0	0	0		
177	Russkaya Akvakul'tura_AR_2013	0	0	0	0	0	0		
178	Gruppa Razgulay_web-site	0	0	0	0	0	0		
179	Gruppa Razgulay_AR_2013	0	0	0	0	0	0		
180	Apteki 36*6_web-site	0	0	0	0	0	0		
181	Apteki 36*6_AR_2013	0	0	0	0	0	0		
182	PhosAgro_AR_2013	0	0	0	0	0	0		
183	PhosAgro_SR_2013	0	0	0	0	0	0		
184	PhosAgro_web-site	0	0	0	0	0	0		
185	Uralkali_web-site	0	0	0	0	0	0		
186	Uralkali_GRI index	1	0	1	0	0	0		
187	Uralkali_AR_2013	0	0	0	0	0	0		
188	Acron_web-site	0	0	0	0	0	0		
189	Acron_AR_2013	0	0	0	0	0	0		
190	KazanOrgSintez_web-site	0	0	0	0	0	0		
191	KazanOrgSintez_AR_2013	0	0	0	0	0	0		
192	KazanOrgSintez_SR_2013	0	0	0	0	0	0		
193	Niznekamskneftekhim_web-site	0	0	0	0	0	0		
194	Niznekamskneftekhim_AR_2013	0	0	0	0	0	0		
195	Bank SP_web-site	0	0	0	0	0	0		
196	Bank SP_AR_2013	0	0	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 3									
No.	Company	3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in metric tonsof CO2 equivalent separately from other emissions (scope3)	3Other indirect emissions in the calculation	3Base year, the categories and rationale, if indirect emissions activities included in the base year	3Standards, methodologies, and assumptions used	3The source of the emission factors used and the GWP rates used or a reference to the GWP source, if available	For Oil & Gas: report estimated Scope3 emissions associated with end-use of products, and emission factors used
1	OAO Gazprom (ER_2013)	0	0	0	0	0	0	0	0
2	OAO Gazprom (AR_2013)	0	0	0	0	0	0	0	0
3	OAO Gazprom (web-site)	0	0	0	0	0	0	0	0
4	OAO Gazprom (CDP_2011)	0	0	0	0	0	0	0	0
5	Aeroflot (AR_2012)	0	0	0	0	0	0	0	0
6	Aeroflot (web-site)	0	0	0	0	0	0	0	0
7	FGC UES (AR_2012)	0	0	0	0	0	0	0	0
8	FGC UES (SR_2012)	0	0	0	0	0	0	0	0
9	FGC UES (CDP_2011)	0	0	0	0	0	0	0	0
10	FGC UES (web-site)	0	0	0	0	0	0	0	0
11	Krasnoyarskays GES (AR_2012)	0	0	0	0	0	0	0	0
12	Krasnoyarskays GES (CDP_2012)	0	0	0	0	0	0	0	0
13	Krasnoyarskays GES (web-site)	0	0	0	0	0	0	0	0
14	MOESK (AR_2012)	0	0	0	0	0	0	0	0
15	MOESK (SR_2012)	0	0	0	0	0	0	0	0
16	MOESK (CDP_2012)	0	0	0	0	0	0	0	0
17	MOESK_web-site	0	0	0	0	0	0	0	0
18	Novatek (AR_2013)	0	0	0	0	1	1	1	0
19	Novatek (CDP_2013)	1	0	0	0	1	1	1	0
20	Novatek (web-site)	0	0	0	0	0	0	0	0
21	RusHydro (AR_2013)	0	0	0	0	0	0	0	0
22	RusHydro (web-site)	0	0	0	0	0	0	0	0
23	Transaero (AR_2012)	0	0	0	0	0	0	0	
24	Transaero (web-site)	0	0	0	0	0	0	0	0
25	Lukoil (AR_2013)	0	0	0	0	0	0	0	0
26	Lukoil (SR_2011-2012)	0	0	0	0	0	0	0	0
27	Lukoil (web-site)	0	0	0	0	0	0	0	0
28	NorNickel (AR_2013)	0	0	0	0	0	0	0	
29	NorNickel (SR_2013)	0	0	0	0	1	0	0	
30	NorNickel (web-site)	0	0	0	0	0	0	0	
31	Sberbank (AR_2013)	0	0	0	0	0	0	0	
32	Sberbank (SR_2013)	0	0	0	0	0	0	0	
33	Sberbank (web-site)	0	0	0	0	0	0	0	
34	Bashneft (AR_2013)	0	0	0	0	0	0	0	0
35	Bashneft (SR_2013)	0	0	0	0	0	0	0	0
36	Bashneft (web-site)	0	0	0	0	0	0	0	
37	Mechel (Form 20-F_2013)	0	0	0	0	0	0	0	
38	Mechel (web-site)	0	0	0	0	0	0	0	

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 3								
	Company	3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in CO2 metric tonsof CO2 equivalent emissions from othe separately (scope3)	3Other indirect emissions categories and activities included in the calculation	3Base year, the rationale, emissions in the base year	3Standards, methodologies, and assumptions used	3The source of the emission factors used and the GWP rates used or a reference to methodologies the GWP source, if available	For Oil & Gas: report estimated emissions associated with Scope3 end-use of products, and emission factors used
39	Megafon (AR_2013)	0	0	0	0	0	0	0	
40	Megafon (SR_2013)	0	0	0	0	0	0	0	
41	Megafon (web-site)	0	0	0	0	0	0	0	
42	Pharmstandard (AR_2013)	0	0	0	0	0	0	0	
43	Pharmstandard (web-site)	0	0	0	0	0	0	0	
44	MTS_web-site	0	0	0	0	0	0	0	
45	MTS_AR_2013	0	0	0	0	0	0	0	
46	MTS_SR_2012	0	0	0	0	0	0	0	
47	RosNeft_SR_2012	1	0	0	0	1	0	0	0
48	RosNeft_AR_2012	0	0	0	0	0	0	0	0
49	RosNeft_website	0	0	0	0	0	0	0	0
50	RusAl_SR_2012	0	0	0	0	0	0	0	
51	RusAl_AR_2013	0	0	0	0	0	0	0	
52	RusAl_web-site	0	0	0	0	0	0	0	
53	VTB_AR_2013	0	0	0	0	0	0	0	
54	VTB_SR_2013	0	0	0	0	0	0	0	
55	VTB_web-site	0	0	0	0	0	0	0	
56	Magnit_AR_2013	0	0	0	0	0	0	0	
57	Magnit_web-site	0	0	0	0	0	0	0	
58	Utair_AR_2013	0	0	0	0	0	0	0	
59	Utair_web-site	0	0	0	0	0	0	0	
60	NCSP_AR_2013	0	0	0	0	0	0	0	
61	NCSP_web-site	0	0	0	0	0	0	0	
62	FESCO_AR_2013	0	0	0	0	0	0	0	
63	FESCO_web-site	0	0	0	0	0	0	0	
64	FESCO_SR_2010-2012	0	0	0	0	0	0	0	
65	Tatneft_AR_2013	0	0	0	0	0	0	0	0
66	Tatneft_web-site	0	0	0	0	0	0	0	0
67	Transneft_AR_2013	0	0	0	0	0	0	0	0
68	Transneft_web-site	0	0	0	0	0	0	0	0
69	SurgutNG_ER_2013	0	0	0	0	0	0	0	0
70	SurgutNG_AR_2013	0	0	0	0	0	0	0	0
71	SurgutNG_web-site	0	0	0	0	0	0	0	0
72	Slavneft_AR_2013	0	0	0	0	0	0	0	0
73	Slavneft_web-site	0	0	0	0	0	0	0	0
74	E.On Russia_AR_2013	0	0	0	0	0	0	0	
75	E.ON Russia_website	0	0	0	0	0	0	0	
76	InterRAO UES_web-site	0	0	0	0	0	0	0	
77	Inter RAO UES_AR_2013	0	0	0	0	0	0	0	
78	Inter RAO UES_SR_2012	0	0	0	0	0	0	0	
79	Rosseti_web-site	0	0	0	0	0	0	0	
80	Rosseti_AR_2013	0	0	0	0	0	0	0	
81	Rosseti_SR_2013	0	0	0	0	0	0	0	

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

	Company	Scope 3										For Oil & Gas: report Scope3 estimated emissions associated with the end-use of products, and emission factors used
		3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in metric tonsof CO2 equivalent separately from indirect emissions (scope3)	3Other indirect emissions in the calculation	3Base year, the rationale, emissions in the base year	3Standards, methodologies, and assumptions used	3The source of the emission factors used and the GWP rates used or a reference to methodologies the GWP source, if available				
82	Mosenergo_web-site	0	0	0	0	0	0	0				
83	Mosenergo_AR_2013	0	0	0	0	0	0	0				
84	Mosenergo_SR_2012-2013	0	0	0	0	0	0	0				
85	OGK-2_SR_2012-2013	0	0	0	0	0	0	0				
86	OGK-2_AR_2013	0	0	0	0	0	0	0				
87	OGK-2_website	0	0	0	0	0	0	0				
88	Irkutskenergo_AR_2012	0	0	0	0	0	0	0				
89	Irkutskenergo_web-site	0	0	0	0	0	0	0				
90	Irkutskenergo_SR_2014	0	0	0	0	0	0	0				
91	TGC1_SR_2012-2013	0	0	0	0	0	0	0				
92	TGC1_AR_2013	0	0	0	0	0	0	0				
93	TGC1_web-site	0	0	0	0	0	0	0				
94	Enel Russia (OGK-5)_AR_2013	0	0	0	0	0	0	0				
95	Enel Russia (OGK-5)_web-site	0	0	0	0	0	0	0				
96	MRSK1_web-site	0	0	0	0	0	0	0				
97	MRSK1_AR_2013	0	0	0	0	0	0	0				
98	DEC_web-site	0	0	0	0	0	0	0				
99	DEC_AR_2013	0	0	0	0	0	0	0				
100	MosES_web-site	0	0	0	0	0	0	0				
101	MosES_AR_2013	0	0	0	0	0	0	0				
102	MRSK-CP_AR_2013	0	0	0	0	0	0	0				
103	MRSK-CP_SR_2013	0	0	0	0	0	0	0				
104	MRSK-CP_web-site	0	0	0	0	0	0	0				
105	MRSK-Ural_AR_2013(interactive)	0	0	0	0	0	0	0				
106	MRSK-Ural_web-site	0	0	0	0	0	0	0				
107	VoTGK_AR_2013	0	0	0	0	0	0	0				
108	VoTGK_web-site	0	0	0	0	0	0	0				
109	Kvadra_AR_2013	0	0	0	0	0	0	0				
110	Kvadra_web-site	0	0	0	0	0	0	0				
111	Lenenergo_AR_2013	0	0	0	0	0	0	0				
112	Lenenergo_web	0	0	0	0	0	0	0				
113	MRSK-volgi_AR_2013	0	0	0	0	0	0	0				
114	MRSK-volgi_web-site	0	0	0	0	0	0	0				
115	RAO UES - Vostoka_web (interactiv	0	0	0	0	0	0	0				
116	Rao UES - Vostoka_AR_2013	0	0	0	0	0	0	0				
117	MRSK-Yuga_AR_2013	0	0	0	0	0	0	0				
118	MRSK-Yuga_web-site	0	0	0	0	0	0	0				
119	Rostelecom_web-site	0	0	0	0	0	0	0				
120	Rostelecom_SR_2013	0	0	0	0	0	0	0				
121	Rostelecom_AR_2013	0	0	0	0	0	0	0				

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Scope 3									
	Company	3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in metric CO2 tonsof CO2 equivalent separately from othe emissions (scope3)	3Other indirect emissions categories and activities included in the calculation	3Base year, the rationale, emissions in the base year	3Standards, methodologies, and assumptions used	3The source of the emission factors used and the GWP rates used or a reference to methodologies the GWP source, if available	For For Oil & Gas: report Scope3 estimated emissions associated with end-use of products, and emission factors used
122	Alrosa_AR_2013	0	0	0	0	0	0	0	0
123	Alrosa_web-site	0	0	0	0	0	0	0	0
124	Alrosa_SR_2013	0	0	0	0	0	0	0	0
125	Severstal_web-site	0	0	0	0	0	0	0	0
126	Severstal_AR_2013	0	0	0	0	0	0	0	0
127	Severstal_SR_2013	0	0	0	0	0	0	0	0
128	NLMK_web-site	0	0	0	0	0	0	0	0
129	NLMK_AR_2013	0	0	0	0	0	0	0	0
130	NLMK_ER_2013	0	0	0	0	0	0	0	0
131	Polymetal_web-site	0	0	0	0	0	0	0	0
132	Polymetal_AR_2013	0	0	0	0	0	0	0	0
133	Polymetal_ER_2013-2014	0	0	0	0	0	0	0	0
134	Polyusgold_web-site	0	0	0	0	0	0	0	0
135	Polyusgold_AR_2013	1	1	0	0	1	1	1	1
136	MMK_AR_2013	0	0	0	0	0	0	0	0
137	MMK_CSR_2013	0	0	0	0	0	0	0	0
138	MMK_web-site	0	0	0	0	0	0	0	0
139	VSMPO_web-site	0	0	0	0	0	0	0	0
140	VSMPO_AR_2013	0	0	0	0	0	0	0	0
141	Raspadskaya_web-site	0	0	0	0	0	0	0	0
142	Raspadskaya_AR_2014	0	0	0	0	0	0	0	0
143	Chelyabinsk ZinkPlant_web-site	0	0	0	0	0	0	0	0
144	Chelyabinsk ZinkPlan_AR_2012	0	0	0	0	0	0	0	0
145	Korshunovskii GOK_web-site	0	0	0	0	0	0	0	0
146	Korshunovskii GOK_AR_2013	0	0	0	0	0	0	0	0
147	Kuzbasskaya TK_web-site	0	0	0	0	0	0	0	0
148	Kuzbasskaya TK_AR_2012	0	0	0	0	0	0	0	0
149	Lenzoloto_web-site	0	0	0	0	0	0	0	0
150	Lenzoloto_AR_2013	0	0	0	0	0	0	0	0
151	Amet_web-site	0	0	0	0	0	0	0	0
152	Amet_AR_2013	0	0	0	0	0	0	0	0
153	Belon_web-site	0	0	0	0	0	0	0	0
154	Belon_AR_2013	0	0	0	0	0	0	0	0
155	Sollers_web-site	0	0	0	0	0	0	0	0
156	Sollers_AR_2013	0	0	0	0	0	0	0	0
157	UACRussia_web-site	0	0	0	0	0	0	0	0
158	UACRussia_AR_2013	0	0	0	0	0	0	0	0
159	Avtovaz_web-site	0	0	0	0	0	0	0	0
160	Avtovaz_AR_2013	0	0	0	0	0	0	0	0
161	MICEX_web-site	0	0	0	0	0	0	0	0
162	MICEX_AR_2013	0	0	0	0	0	0	0	0

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

	Company	Scope 3										
		3Gross other indirect emissions in metric tons	3Gases included in calculation, if available	3Biogenic emissions in metric CO2 tonsof CO2 equivalent separately from othe emissions	3Other indirect emissions categories and activities included in the calculation	3Base year, the rationale, emissions in the base year	3Standards, methodologies, and assumptions used	3The source of the emission factors used and the GWP rates used or a reference to the GWP source, if available	For For Oil & Gas: report estimated emissions associated with end-use of products, and Scope3 emission factors used
163	AFK Sistema_web-site	0	0	0	0	0	0	0	0
164	AFK Sistema_AR_2013	0	0	0	0	0	0	0	0
165	AFK Sistema_SR_2013	0	0	0	0	0	0	0	0
166	Vbank_web-site	0	0	0	0	0	0	0	0
167	Vbank_AR_2013	0	0	0	0	0	0	0	0
168	Mvideo_web-site	0	0	0	0	0	0	0	0
169	Mvideo_AR_2013	0	0	0	0	0	0	0	0
170	Protek_web-site	0	0	0	0	0	0	0	0
171	Protek_AR_2013	0	0	0	0	0	0	0	0
172	Cherkizovo Group_web-site	0	0	0	0	0	0	0	0
173	Cherkizovo Group_AR_2013	0	0	0	0	0	0	0	0
174	Dixi Group_web-site	0	0	0	0	0	0	0	0
175	Dixi Group_AR_2013	0	0	0	0	0	0	0	0
176	Russkaya Akvakul'tura_web-site	0	0	0	0	0	0	0	0
177	Russkaya Akvakul'tura_AR_2013	0	0	0	0	0	0	0	0
178	Gruppa Razguliay_web-site	0	0	0	0	0	0	0	0
179	Gruppa Razguliay_AR_2013	0	0	0	0	0	0	0	0
180	Apteki 36*6_web-site	0	0	0	0	0	0	0	0
181	Apteki 36*6_AR_2013	0	0	0	0	0	0	0	0
182	PhosAgro_AR_2013	0	0	0	0	0	0	0	0
183	PhosAgro_SR_2013	0	0	0	0	0	0	0	0
184	PhosAgro_web-site	0	0	0	0	0	0	0	0
185	Uralkali_web-site	0	0	0	0	0	0	0	0
186	Uralkali_GRI index	0	0	0	0	0	0	0	0
187	Uralkali_AR_2013	0	0	0	0	0	0	0	0
188	Acron_web-site	0	0	0	0	0	0	0	0
189	Acron_AR_2013	0	0	0	0	0	0	0	0
190	KazanOrgSintez_web-site	0	0	0	0	0	0	0	0
191	KazanOrgSintez_AR_2013	0	0	0	0	0	0	0	0
192	KazanOrgSintez_SR_2013	0	0	0	0	0	0	0	0
193	Niznekamskneftekhim_web-site	0	0	0	0	0	0	0	0
194	Niznekamskneftekhim_AR_2013	0	0	0	0	0	0	0	0
195	Bank SP_web-site	0	0	0	0	0	0	0	0
196	Bank SP_AR_2013	0	0	0	0	0	0	0	0

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		GHG emissions intensity					
No.	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in the intensity ratio (scope1,2,3)	Gases included in calculation of intensity	**For For Oil & Gas:** For operations within operational control boundary, report energy intensity of oil and gas production (GJ/mboe), of refineries (GJ/t) and of petrochemicals (GJ/t)	**For For Oil & Gas**: report emission intensity in tonnes CO2e/mboe to the perspective business sector (oil and gas, refining) for emissions within the reporting boundary of oper.control
1	OAO Gazprom (ER_2013)	0	0	0	0	0	0
2	OAO Gazprom (AR_2013)	0	0	0	0	0	0
3	OAO Gazprom (web-site)	0	0	0	0	0	0
4	OAO Gazprom (CDP_2011)	1	1	1	1	0	0
5	Aeroflot (AR_2012)	0	0	0	0		
6	Aeroflot (web-site)	0	0	0	0		
7	FGC UES (AR_2012)	0	0	0	0		
8	FGC UES (SR_2012)	0	0	0	0		
9	FGC UES (CDP_2011)	0	0	0	0		
10	FGC UES (web-site)	0	0	0	0		
11	Krasnoyarskays GES (AR_2012)	0	0	0	0		
12	Krasnoyarskays GES (CDP_2012)	0	0	0	0		
13	Krasnoyarskays GES (web-site)	0	0	0	0		
14	MOESK (AR_2012)	0	0	0	0		
15	MOESK (SR_2012)	0	0	0	0		
16	MOESK (CDP_2012)	0	0	0	0		
17	MOESK_web-site	0	0	0	0		
18	Novatek (AR_2013)	0	0	0	0	0	0
19	Novatek (CDP_2013)	0	0	0	0	0	0
20	Novatek (web-site)	0	0	0	0	0	0
21	RusHydro (AR_2013)	0	0	0	0		
22	RusHydro (web-site)	0	0	0	0		
23	Transaero (AR_2012)	0	0	0	0		
24	Transaero (web-site)	0	0	0	0		
25	Lukoil (AR_2013)	0	0	0	0	0	0
26	Lukoil (SR_2011-2012)	0	0	0	0	0	0
27	Lukoil (web-site)	0	0	0	0	0	0
28	NorNickel (AR_2013)	0	0	0	0		
29	NorNickel (SR_2013)	0	0	0	0		
30	NorNickel (web-site)	0	0	0	0		
31	Sberbank (AR_2013)	0	0	0	0		
32	Sberbank (SR_2013)	0	0	0	0		
33	Sberbank (web-site)	0	0	0	0		
34	Bashneft (AR_2013)	0	0	0	0	0	0
35	Bashneft (SR_2013)	0	0	0	0	0	0
36	Bashneft (web-site)	0	0	0	0		
37	Mechel (Form 20-F_2013)	0	0	0	0		
38	Mechel (web-site)	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		GHG emissions intensity					
	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in the intensity ratio (scope1,2,3)	Gases included in calculation of intensity	**For For Oil & Gas:** For operations within operational control boundary, report energy intensity of oil and gas production (GJ/mboe), of refineries (GJ/t) and of petrochemicals (GJ/t)	**For For Oil & Gas**: report emission intensity in tonnes CO2e/mboe to the perspective business sector (oil and gas, refining) for emissions within the reporting boundary of oper.control
39	Megafon (AR_2013)	0	0	0	0		
40	Megafon (SR_2013)	0	0	0	0		
41	Megafon (web-site)	0	0	0	0		
42	Pharmstandard (AR_2013)	0	0	0	0		
43	Pharmstandard (web-site)	0	0	0	0		
44	MTS_web-site	0	0	0	0		
45	MTS_AR_2013	0	0	0	0		
46	MTS_SR_2012	0	0	0	0		
47	RosNeft_SR_2012	0	0	0	0	0	0
48	RosNeft_AR_2012	0	0	0	0	0	0
49	RosNeft_website	0	0	0	0	0	0
50	RusAl_SR_2012	0	0	0	0		
51	RusAl_AR_2013	0	0	0	0		
52	RusAl_web-site	0	0	0	0		
53	VTB_AR_2013	0	0	0	0		
54	VTB_SR_2013	0	0	0	0		
55	VTB_web-site	0	0	0	0		
56	Magnit_AR_2013	0	0	0	0		
57	Magnit_web-site	0	0	0	0		
58	Utair_AR_2013	0	0	0	0		
59	Utair_web-site	0	0	0	0		
60	NCSP_AR_2013	0	0	0	0		
61	NCSP_web-site	0	0	0	0		
62	FESCO_AR_2013	0	0	0	0		
63	FESCO_web-site	0	0	0	0		
64	FESCO_SR_2010-2012	0	0	0	0		
65	Tatneft_AR_2013	0	0	0	0	0	0
66	Tatneft_web-site	0	0	0	0	0	0
67	Transneft_AR_2013	0	0	0	0	0	0
68	Transneft_web-site	0	0	0	0	0	0
69	SurgutNG_ER_2013	0	0	0	0	0	0
70	SurgutNG_AR_2013	0	0	0	0	0	0
71	SurgutNG_web-site	0	0	0	0	0	0
72	Slavneft_AR_2013	0	0	0	0	0	0
73	Slavneft_web-site	0	0	0	0	0	0
74	E.On Russia_AR_2013	0	0	0	0		
75	E.ON Russia_website	0	0	0	0		
76	InterRAO UES_web-site	0	0	0	0		
77	Inter RAO UES_AR_2013	1	0	0	0		
78	Inter RAO UES_SR_2012	1	0	0	0		
79	Rosseti_web-site	0	0	0	0		
80	Rosseti_AR_2013	0	0	0	0		
81	Rosseti_SR_2013	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		GHG emissions intensity					
	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in the intensity ratio (scope1,2,3)	Gases included in calculation of intensity	**For For Oil & Gas:** For operations within operational control boundary, report energy intensity of oil and gas production (GJ/mboe), of refineries (GJ/t) and of petrochemicals (GJ/t)	**For For Oil & Gas**: report emission intensity in tonnes CO2e/mboe to the perspective business sector (oil and gas, refining) for emissions within the reporting boundary of oper.control
82	Mosenergo_web-site	0	0	0	0		
83	Mosenergo_AR_2013	0	0	0	0		
84	Mosenergo_SR_2012-2013	0	0	0	0		
85	OGK-2_SR_2012-2013	0	0	0	0		
86	OGK-2_AR_2013	0	0	0	0		
87	OGK-2_website	0	0	0	0		
88	Irkutskenergo_AR_2012	1	1	1	1		
89	Irkutskenergo_web-site	0	0	0	0		
90	Irkutskenergo_SR_2014	1	1	1	1		
91	TGC1_SR_2012-2013	0	0	0	0		
92	TGC1_AR_2013	0	0	0	0		
93	TGC1_web-site	0	0	0	0		
94	Enel Russia (OGK-5)_AR_2013	0	0	0	0		
95	Enel Russia (OGK-5)_web-site	0	0	0	0		
96	MRSK1_web-site	0	0	0	0		
97	MRSK1_AR_2013	0	0	0	0		
98	DEC_web-site	0	0	0	0		
99	DEC_AR_2013	0	0	0	0		
100	MosES_web-site	0	0	0	0		
101	MosES_AR_2013	0	0	0	0		
102	MRSK-CP_AR_2013	0	0	0	0		
103	MRSK-CP_SR_2013	0	0	0	0		
104	MRSK-CP_web-site	0	0	0	0		
105	MRSK-Ural_AR_2013(interactive)	0	0	0	0		
106	MRSK-Ural_web-site	0	0	0	0		
107	VoTGK_AR_2013	0	0	0	0		
108	VoTGK_web-site	0	0	0	0		
109	Kvadra_AR_2013	0	0	0	0		
110	Kvadra_web-site	0	0	0	0		
111	Lenenergo_AR_2013	0	0	0	0		
112	Lenenergo_web	0	0	0	0		
113	MRSK-volgi_AR_2013	0	0	0	0		
114	MRSK-volgi_web-site	0	0	0	0		
115	RAO UES - Vostoka_web (interactiv	0	0	0	0		
116	Rao UES - Vostoka_AR_2013	0	0	0	0		
117	MRSK-Yuga_AR_2013	0	0	0	0		
118	MRSK-Yuga_web-site	0	0	0	0		
119	Rostelecom_web-site	0	0	0	0		
120	Rostelecom_SR_2013	0	0	0	0		
121	Rostelecom_AR_2013	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		GHG emissions intensity					
	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in the intensity ratio (scope1,2,3)	Gases included in calculation of intensity	**For For Oil & Gas:** For operations within operational control boundary, report energy intensity of oil and gas production (GJ/mboe), of refineries (GJ/t) and of petrochemicals (GJ/t)	**For For Oil & Gas**: report emission intensity in tonnes CO2e/mboe to the perspective business sector (oil and gas, refining) for emissions within the reporting boundary of oper.control
122	Alrosa_AR_2013	0	0	0	0		
123	Alrosa_web-site	0	0	0	0		
124	Alrosa_SR_2013	0	0	0	0		
125	Severstal_web-site	0	0	0	0		
126	Severstal_AR_2013	0	0	0	0		
127	Severstal_SR_2013	0	0	0	0		
128	NLMK_web-site	1	1	0	0		
129	NLMK_AR_2013	1	1	0	0		
130	NLMK_ER_2013	1	1	0	0		
131	Polymetal_web-site	1	1	1	0		
132	Polymetal_AR_2013	1	1	1	0		
133	Polymetal_ER_2013-2014	1	1	1	0		
134	Polyusgold_web-site	0	0	0	0		
135	Polyusgold_AR_2013	0	0	0	0		
136	MMK_AR_2013	0	0	0	0		
137	MMK_CSR_2013	0	0	0	0		
138	MMK_web-site	0	0	0	0		
139	VSMPO_web-site	0	0	0	0		
140	VSMPO_AR_2013	0	0	0	0		
141	Raspadskaya_web-site	0	0	0	0		
142	Raspadskaya_AR_2014	0	0	0	0		
143	Chelyabinsk ZinkPlant_web-site	0	0	0	0		
144	Chelyabinsk ZinkPlan_AR_2012	0	0	0	0		
145	Korshunovskii GOK_web-site	0	0	0	0		
146	Korshunovskii GOK_AR_2013	0	0	0	0		
147	Kuzbasskaya TK_web-site	0	0	0	0		
148	Kuzbasskaya TK_AR_2012	0	0	0	0		
149	Lenzoloto_web-site	0	0	0	0		
150	Lenzoloto_AR_2013	0	0	0	0		
151	Amet_web-site	0	0	0	0		
152	Amet_AR_2013	0	0	0	0		
153	Belon_web-site	0	0	0	0		
154	Belon_AR_2013	0	0	0	0		
155	Sollers_web-site	0	0	0	0		
156	Sollers_AR_2013	0	0	0	0		
157	UACRussia_web-site	0	0	0	0		
158	UACRussia_AR_2013	0	0	0	0		
159	Avtovaz_web-site	0	0	0	0		
160	Avtovaz_AR_2013	0	0	0	0		
161	MICEX_web-site	0	0	0	0		
162	MICEX_AR_2013	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		GHG emissions intensity					
	Company	GHG intensity ratio	The organisation-spesific metric	Types of GHG emissions included in the intensity ratio (scope1,2,3)	Gases included in calculation of intensity	**For For Oil & Gas:** For operations within operational control boundary, report energy intensity of oil and gas production (GJ/mboe), of refineries (GJ/t) and of petrochemicals (GJ/t)	**For For Oil & Gas**: report emission intensity in tonnes CO2e/mboe to the perspective business sector (oil and gas, refining) for emissions within the reporting boundary of oper.control
163	AFK Sistema_web-site	0	0	0	0		
164	AFK Sistema_AR_2013	0	0	0	0		
165	AFK Sistema_SR_2013	0	0	0	0		
166	Vbank_web-site	0	0	0	0		
167	Vbank_AR_2013	0	0	0	0		
168	Mvideo_web-site	0	0	0	0		
169	Mvideo_AR_2013	0	0	0	0		
170	Protek_web-site	0	0	0	0		
171	Protek_AR_2013	0	0	0	0		
172	Cherkizovo Group_web-site	0	0	0	0		
173	Cherkizovo Group_AR_2013	0	0	0	0		
174	Dixi Group_web-site	0	0	0	0		
175	Dixi Group_AR_2013	0	0	0	0		
176	Russkaya Akvakul'tura_web-site	0	0	0	0		
177	Russkaya Akvakul'tura_AR_2013	0	0	0	0		
178	Gruppa Razguliay_web-site	0	0	0	0		
179	Gruppa Razguliay_AR_2013	0	0	0	0		
180	Apteki 36*6_web-site	0	0	0	0		
181	Apteki 36*6_AR_2013	0	0	0	0		
182	PhosAgro_AR_2013	0	0	0	0		
183	PhosAgro_SR_2013	0	0	0	0		
184	PhosAgro_web-site	0	0	0	0		
185	Uralkali_web-site	0	0	0	0		
186	Uralkali_GRI index	0	0	0	0		
187	Uralkali_AR_2013	0	0	0	0		
188	Acron_web-site	0	0	0	0		
189	Acron_AR_2013	0	0	0	0		
190	KazanOrgSintez_web-site	0	0	0	0		
191	KazanOrgSintez_AR_2013	0	0	0	0		
192	KazanOrgSintez_SR_2013	0	0	0	0		
193	Niznekamskneftekhim_web-site	0	0	0	0		
194	Niznekamskneftekhim_AR_2013	0	0	0	0		
195	Bank SP_web-site	0	0	0	0		
196	Bank SP_AR_2013	0	0	0	0		

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Reduction of GHG emissions																			
No.	Company	The amount of GHG emissions reduction achieved as a result of initiatives	Gases included in calculation of reduction	Base year and rationale of chosing that year	Standards, methodologies, assumptions used	Report where the amount of reduction occurred (reduction)	For Oil & Gas: Breakdown by type (fuel switching, renewables, flaring, etc)	For Electric Utilities: Report the amount of reduce SOx and other emissions per MWh for net generation from all combustion power plants	For Electric Utilities: NOx, SOx and other significant emissions per MWh for net generation from all combustion power plants	For Mining and metals: Discussion of the management of fugitive emissions such as dust from mining and processing activities and other noise and seismic impacts from explosive use through, for example, monitoring activities and compliance with regulatory limits	For Mining and metals: NOx, SOx and other significant emissions for the as intensity broken down by activities due to climate business sources)	For Oil & Gas: Financial implications and other risks and opportunities for the change	For Oil & Gas: report NOx, SOx and other significant emissions by business sector	Total company	Total for company
1	OAO Gazprom (ER_2013)	1	0	1	0	1	0	0				0	0	5	5						
2	OAO Gazprom (AR_2013)	1	0	1	0	1	0					0	0	5							
3	OAO Gazprom (web-site)	1	1	0	0	0	1					0	0	3							
4	OAO Gazprom (CDP_2011)	1	0	1	0	0	0	0				1	0	20	33						
5	Aeroflot (AR_2012)	0	0	0	0	0								0							
6	Aeroflot (web-site)	0	0	0	0	0								0	0						
7	FGC UES (AR_2012)	0	0	0	0	0		0	0					0							
8	FGC UES (SR_2012)	0	0	0	0	0		0	0					2							
9	FGC UES (CDP_2011)	0	0	0	0	0		0	0					5							
10	FGC UES (web-site)	0	0	0	0	0		0	0					0	7						
11	Krasnoyarskays GES (AR_2012)	0	0	0	0	0		0	0					0							
12	Krasnoyarskays GES (CDP_2012)	0	0	0	0	0		0	0					0							
13	Krasnoyarskays GES (web-site)	0	0	0	0	0		0	0					0	0						
14	MOESK (AR_2012)	0	0	0	0	0		0	0					0							
15	MOESK (SR_2012)	1	1	1	0	1		0	0					7							
16	MOESK (CDP_2012)	0	0	0	0	0								5							
17	MOESK_web-site	0	0	0	0	0								0	12						
18	Novatek (AR_2013)	1	0	0	0	1	0					0	0	2							
19	Novatek (CDP_2013)	0	0	0	0	1	1					1	0	20							
20	Novatek (web-site)	1	1	0	0	0	0	0				0	0	2	24						
21	RusHydro (AR_2013)	1	0	1	0	0		0	0					2							
22	RusHydro (web-site)	1	0	0	0	0		0	0					1	3						
23	Transaero (AR_2012)	0	0	0	0	0								0							
24	Transaero (web-site)	0	0	0	0	0								0	0						
25	Lukoil (AR_2013)	1	0	0	0	0	0					0	0	0							
26	Lukoil (SR_2011-2012)	1	0	0	0	0								1	2						
27	Lukoil (web-site)	1	0	0	0	0	1					0	0	2	4						
28	NorNickel (AR_2013)	1	1	1	0	1					0	0		7							
29	NorNickel (SR_2013)	1	0	0	0	0					0	0		10							
30	NorNickel (web-site)	1	1	0	0	0					0	0		4	21						
31	Sberbank (AR_2013)	0	0	0	0	0								0							
32	Sberbank (SR_2013)	0	0	0	0	0								0							
33	Sberbank (web-site)	0	0	0	0	0								0	0						
34	Bashneft (AR_2013)	0	0	0	0	0	0					0	0	0							
35	Bashneft (SR_2013)	1	0	0	0	0	0						0	0	1						
36	Bashneft (web-site)	0	0	0	0	0								0	1						
37	Mechel (Form 20-F_2013)	0	0	0	0	0					0	0		0							
38	Mechel (web-site)	0	0	0	0	0					0	0		0	0						

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

		Reduction of GHG emissions																					
	Company	The amount of GHG emissions reduction achieved as a result of initiatives	Gases included in calculation of reduction	Base year and rationale	Standards, methodologies, and assumptions that years used (reduction)	Report where the reduction occurred (Scope1,2,3)	For Oil & Gas: Breakdown by type (fuel switching, use of renewables, flaring, etc) of the amount of emissions achieved as a result of initiative to reduce emissions, in metric tons of CO2e	For Electric Utilities: Report NOx, SOx and other significant emissions per MWh net generation from all combustion power plants	For Electric Utilities: NOx, SOx and other significant emissions per MWh for net generation from all combustion power plants	For Mining and metals: Discussion of the management of fugitive emissions such as dust from mining and processing activities and other significant impacts from explosive and seismic monitoring activities and emissions for the use through, for example, major organisation's compliance with regulatory limits	For Mining and metals: Financial implications of NOx, SOx and other significant emissions for the broken and on-site activities due to stationary sources)	For Oil & Gas: Financial implications of climate change	For Oil & Gas: report NOx, SOx and other significant emissions as intensity by business sector	Total	Total for company
39	Megafon (AR_2013)	0	0	0	0	0	0												0	
40	Megafon (SR_2013)	0	0	0	0	0	0												0	
41	Megafon (web-site)	0	0	0	0	0	0												0	0
42	Pharmstandard (AR_2013)	0	0	0	0	0	0												0	
43	Pharmstandard (web-site)	0	0	0	0	0	0												0	0
44	MTS_web-site	0	0	0	0	0	0												0	
45	MTS_AR_2013	1	0	0	0	0	0												1	
46	MTS_SR_2012	0	0	0	0	0	0												0	1
47	RosNeft_SR_2012	1	0	0	0	1	0	1					0	1	13					
48	RosNeft_AR_2012	0	0	0	0	0	0	0					0	0	0					
49	RosNeft_website	0	0	0	0	0	0	0					0	0	0	13				
50	RusAl_SR_2012	1	1	1	0	1	0				0					7				
51	RusAl_AR_2013	0	0	0	0	0	0				0	0				0				
52	RusAl_web-site	0	0	0	0	0	0				0	0				0				
53	VTB_AR_2013	0	0	0	0	0	0												0	7
54	VTB_SR_2013	0	0	0	0	0	0												0	
55	VTB_web-site	0	0	0	0	0	0												0	
56	Magnit_AR_2013	0	0	0	0	0	0												0	0
57	Magnit_web-site	0	0	0	0	0	0												0	
58	Utair_AR_2013	0	0	0	0	0	0												0	0
59	Utair_web-site	0	0	0	0	0	0												0	2
60	NCSP_AR_2013	0	0	0	0	0	0												0	
61	NCSP_web-site	0	0	0	0	0	0												0	0
62	FESCO_AR_2013	0	0	0	0	0	0												0	
63	FESCO_web-site	0	0	0	0	0	0												0	
64	FESCO_SR_2010-2012	0	0	0	0	0	0												0	0
65	Tatneft_AR_2013	1	0	0	1	0	0						0	2						
66	Tatneft_web-site	1	0	0	1	0	0						0	2		4				
67	Transneft_AR_2013	0	0	0	0	0	0						0	0		0				
68	Transneft_web-site	0	0	0	0	0	0						0	0		0				
69	SurgutNG_ER_2013	1	1	0	0	0	0						0	2						
70	SurgutNG_AR_2013	1	1	0	0	0	0						0	2						
71	SurgutNG_web-site	1	0	0	0	0	0						0	2		4				
72	Slavneft_AR_2013	0	0	0	0	0	0						0	0		0				
73	Slavneft_web-site	0	0	0	0	0	0						0	0		0				
74	E.On Russia_AR_2013	1	1	1	0	0	0	1	0				0	0		9				
75	E.ON Russia_website	0	0	0	0	0	0	0	0							0				
76	InterRAO UES_web-site	0	0	0	0	0	0	0	0							0				
77	Inter RAO UES_AR_2013	1	0	1	0	0	0	1	0							7				
78	Inter RAO UES_SR_2012	1	0	1	0	0	0	1	0							7				14
79	Rosseti_web-site	0	0	0	0	0	0	0	0							0				
80	Rosseti_AR_2013	0	0	0	0	0	0	0	0							0				
81	Rosseti_SR_2013	0	0	0	0	0	0	1	0							1				1

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

| | Company | Reduction of GHG emissions | | |

| | | Reduction of GHG emissions | | |

	Company	Reduction of GHG emissions																					
		The amount of GHG emissions reduction achieved as a direct result of initiatives	Gases included in calculation of reduction	Base year and rationale	Standards, methodologies, assumptions used	Report where the reduction emissions occurred (Scope1,2,3)	For Oil & Gas: Breakdown by type (fuel switching, renewables, flaring, etc)	For Oil & Gas: For Utilities: Report the amount of GHG reduction for generation from all combustion power plants	For Electric Utilities: NOx, SOx and other significant emissions per MWh net generation	For Mining and metals: Discussion of the management of fugitive emissions such as dust from mining activities and noise and impacts from explosive use through, for example, monitoring activities and compliance with regulatory limits	For Mining and metals: NOx, SOx and other significant emissions and other impacts from major and on-site activities with stationary sources)	For Oil & Gas: Financial implications and other risks due to climate change	For Oil & Gas: For Oil & Gas: other significant emissions by business sector	Total	Total for company
163	AFK Sistema_web-site	0	0	0	0	0								0	0
164	AFK Sistema_AR_2013	0	0	0	0	0								0	0
165	AFK Sistema_SR_2013	0	0	0	0	0								0	0
166	Vbank_web-site	0	0	0	0	0								0	
167	Vbank_AR_2013	0	0	0	0	0								0	0
168	Mvideo_web-site	0	0	0	0	0								0	
169	Mvideo_AR_2013	0	0	0	0	0								0	0
170	Protek_web-site	0	0	0	0	0								0	
171	Protek_AR_2013	0	0	0	0	0								0	0
172	Cherkizovo Group_web-site	0	0	0	0	0								0	
173	Cherkizovo Group_AR_2013	0	0	0	0	0								0	0
174	Dixi Group_web-site	0	0	0	0	0								0	
175	Dixi Group_AR_2013	0	0	0	0	0								0	0
176	Russkaya Akvakul'tura_web-site	0	0	0	0	0								0	
177	Russkaya Akvakul'tura_AR_2013	0	0	0	0	0								0	0
178	Gruppa Razguliay_web-site	0	0	0	0	0								0	
179	Gruppa Razguliay_AR_2013	0	0	0	0	0								0	
180	Apteki 36*6_web-site	0	0	0	0	0								0	
181	Apteki 36*6_AR_2013	0	0	0	0	0								0	0
182	PhosAgro_AR_2013	0	0	0	0	0					0	0		0	
183	PhosAgro_SR_2013	0	0	0	0	0					0	0		0	
184	PhosAgro_web-site	0	0	0	0	0					0	0		0	0
185	Uralkali_web-site	1	0	1	0	1					0	0		5	
186	Uralkali_GRI index	1	0	1	0	1					0	1		9	
187	Uralkali_AR_2013	1	0	1	0	0					0	1		6	20
188	Acron_web-site	0	0	0	0	0					0	0		0	
189	Acron_AR_2013	0	0	0	0	0					0	0		0	0
190	KazanOrgSintez_web-site	0	0	0	0	0					0	1		1	
191	KazanOrgSintez_AR_2013	0	0	0	0	0					0	1		1	
192	KazanOrgSintez_SR_2013	1	1	1	0	1					1	1		9	10
193	Niznekamskneftekhim_web-site	0	0	0	0	0					0	0		0	
194	Niznekamskneftekhim_AR_2013	0	0	0	0	0					0	0		0	0
195	Bank SP_web-site	0	0	0	0	0								0	
196	Bank SP_AR_2013	0	0	0	0	0								0	0

Continued - Disclosures across all media benchmarked against GRI guidelines, including specific requirements for some sectors.

Appendix E

Main questions:

- What do you know about climate change? (to find out whether the interviewee is aware of climate change issue/what they know about climate change);
- How important is that issue for you personally?
- How important do you think the issue of climate change to the Russian society, to the State?
- What do you know about the Kyoto Protocol? How useful was participation of Russia in the Protocol? How beneficial could have been the participation in the second phase of the Protocol?
- How important the issue of climate change for Russian companies?
- What role should Russian society, the State, companies (auditors, accountants) play in mitigating climate change;
- Why some companies voluntary disclose information on GHG emissions?
- Why some companies prefer not to disclose information on GHG emissions?
- Does disclosure of information on GHG emissions affect the business practice? Should companies disclose information on GHG emissions?
- Who needs this information? Who is the user?
- How to make companies environmentally responsible? How to change their practice?
- Could the possibility to sell carbon allowances facilitate the reduction of GHG emissions?
- Why do you think companies disclose information on energy efficiency, polluting emissions, on environmental protection?
- What precludes companies from more radical approach? How do you think can companies be stimulated to engage with climate change issues?
- Is there any pressure on companies to report GHG emissions? Where does it come from?
- Is there any pressure on companies to report polluting emissions or energy efficiency? Where does it come from? How that pressure is exerted?
- From perspective of education, are accounting and management students in Russia exposed to the problems of climate change?